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NEW ENGLAND DENTAL SOCIETY.

Twenty-Fifth Anniversary.

1887.

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G. C. AINSWORTH,
Executive Committee.

E. O. KINSMAN,
Librarian.

W. E. PAGE,
Executive Committee.

PROCEEDINGS

OF THE

TWENTY-FIFTH ANNUAL MEETING

OF THE

NEW ENGLAND DENTAL SOCIETY,

HELD AT BOSTON, MASS.,

October 5th, 6th and 7th, 1887.

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Boston, Oct. 5, 1887,
Boston Young Men's Christian Union Building,
Union Hall, Boylston Street.

At the meeting of the New England Dental Society, held this day, the following votes were passed:

Voted, That the transactions of this meeting be preserved in print as a memento of this, our 25th anniversary, and that each member have a copy sent him.

Voted, That a committee of three be appointed by the Chair to prepare the memorial volume, and that it include the Constitution, Rules, By-Laws, List of Officers, etc., the committee to have full powers.

In accordance with the last vote, the Chairman, Dr. C. A. Brackett, appointed as that committee, Drs. A. M. Dudley, G. A. Gerry and A. H. Gilson.

A. H. GILSON, D. D. S.,
Assistant Secretary New England Dental Society.

Boston, Oct. 1, 1888.

In accordance with the above votes, the committee present this volume as the proceedings of the 25th anniversary meeting.

By an unfortunate accident, a part of the stenographer's notes were accidentally destroyed, and the volume has been made up from the rough drafts of our Assistant Secretary, taken at the meeting.

The photographs which adorn the book are the individual contributions of the persons whose pictures appear, the society bearing no expense of their appearance.

Respectfully,

DR. A. M. DUDLEY,
DR. G. A. GERRY,
DR. A. H. GILSON,
Committee on Publication.

PROCEEDINGS.

FIRST DAY—AFTERNOON SESSION.

Union Hall, Boylston Street,
Wednesday, Oct. 5, 1887, 3.10 P. M.

Dr. A. M. Dudley: Gentlemen will please come to order. The President of the Society, Dr. Geo. A. Young of Concord, N. H., has been summoned to a case in court, and will not be able to be with us, and neither of the Vice Presidents being present it will be necessary to choose a President pro tem.

On motion, Dr. F. Searle was chosen.

Dr. Searle: The first business will be the reading of the records of the 24th annual meeting.

Dr. A. H. Gilson: The records that I am about to read are in the handwriting of Dr. A. M. Dudley, the Secretary. (Read records.)

Dr. L. D. Shepard: There is one little error in the records that I recall. I would move that the words "and patient" be expunged from the resolutions of thanks passed to Dr. W. J. Younger of San Francisco, California. My reasons are these—The patient was paid to have the operation performed, and I do not think that he should be thanked by a scientific society like this.

The motion was discussed by Drs. Chapman and Peabody, who asked Dr. Shepard several questions, and then passed.

A Member: I now move that the records be now approved. Passed.

Dr. Searle: The next business in order is the Treasurer's report.

Dr. G. A. Gerry: Members of the New England Dental Society: I beg leave to submit the following report—

RECEIPTS.

Cash on hand Oct. 7, '86,		$281 01
Rec'd from dues, annual meeting,		164 00
Rec'd from dues since annual meeting,		40 00
Total,		$485 01

EXPENSES.

Oct. 7, '86, E. O. Kinsman, Librarian,	$ 4 52	
" " " " " Executive Committee,	1 50	
" " " " " Expenses of Dr. Kingsley,	19 25	
" " A. M. Dudley, Secretary,	17 25	
" " Citizen Newspaper Co., printing Treasurer's blanks,	1 75	
" " E. O. Kinsman, repairs on microscope,	11 25	
" " Baker, Jones & Co., printing Dr. Kingsley's address,	10 75	
" " Treasurer's bill, postage, etc.,	2 75	
Total,		$69 02
Balance,		$415 99

Which is the amount on hand to-day, Oct. 5, 1887. My accounts have been audited by the Auditing Committee, and they have pronounced them correct.

A MEMBER: I move that the report be accepted and placed on file. Passed.

DR. SEARLE: The next business in order is the reading of the report of your Librarian and Microscopist, Dr. E. O. Kinsman.

DR. E. O. KINSMAN: As Librarian and Microscopist, I will report that during the year the microscope has been put in thorough repair, at a cost of $11.25. It has not been used very much during the year, and it is much desired that applications may be made for its use by any member in good standing. Each member in turn is entitled to its use three consecutive weeks at one time.

The books of the society remain in the same passive condition of last year, no application having been made for their use.

It is recommended that a safer and better box for the microscope be secured, as it is insecure, both as regards locking it up and jolting and the possible breakage and loss of the object sections.

I would ask that the balance of the money voted last year, and more, if necessary, be allowed me to procure a new box.

A Member: I move that the report be accepted and placed on file, and that the recommendations be adopted. Carried.

Dr. Searle: Has the Executive Committee any report to make?

Dr. Dudley: The Executive Committee has no special report to make, but offer the following printed programme of this meeting:

PROGRAMME.

Wednesday, 3 o'clock p. m.—Paper by Dr. G. A. Gerry, Lowell, Mass. Subject, "History of the Society." Followed by remarks reminiscent of the society and the work it has accomplished.

Wednesday, 4 o'clock p. m.—Paper by Dr. Theodore F. Chupein of Philadelphia, Pa. Subject, "Copper Amalgam." Discussion of subject opened by Dr. Ambrose Lawrence of Boston.

Wednesday, 8 o'clock p. m.—General discussion. Subject, "Incidents of Office Practice."

Wednesday, 6 o'clock, p. m.—Adjournment of afternoon session.

Wednesday, Evening Session, 7.30 o'clock p. m.—Miscellaneous business.

Wednesday, 8 o'clock p. m.—Paper by Dr. L. D. Shepard of Boston, Mass. Subject, "Laws for the Regulation of Dental Practice."

Wednesday, 9 o'clock p. m.—Discussion by Dr. J. W. Clowes of New York City. Subject, "Demoralization of the Tooth-brush and Appropriate Means for the Care of the Teeth."

Wednesday, 10 o'clock p. m.—General Discussion. Subject, "Incidents of Office Practice."

Wednesday, 11 o'clock p. m.—Adjournment of evening session.

CLINICS.

The entire morning session of Thursday, October 6th, between the hours of 9 o'clock a. m. and 1 o'clock p. m. will be devoted to Clinics. They will take place at the Harvard Dental School, North Grove Street. The following will be some of the Clinics to be given:

Dr. W. H. Atkinson of New York, "Operation of Sponge Grafting and Treatment of Pyorrhea Alveolaris."

Dr S. S. Stowell, Pittsfield, Mass., "New Method of Crown Setting."

Dr. H. A. Parr, New York City, "Gold and Porcelain Crowns and Bridge Work."

Dr. E. Parmly Brown, Flushing, N. Y., "Porcelain Bridge Work."

Dr. C. C. Carroll, Meadville, Pa., "Casting Aluminum Plates."

Dr. Geo. F. Reese, Brooklyn, N. Y., "Treating and Filling of Pulpless Teeth." "Use of Gold Alloy in Crowning Teeth."

Dr. J. Gardner Morey, New York City, "Use of New Nerve Canal Drills." "Hollow Post Tooth Crowns." "Use of a New Universal Separator." "Removable Bridge Work."

Dr. Geo. F. Waters, Boston, Mass., will demonstrate the "Comparative Value of Gold and Oxy-Phosphate as a Filling Material."

Dr. D. B. Freman, Chicago, will demonstrate the "Use of the New Double Loop Clamp."

Dr. D. Genese, Baltimore, Md., will demonstrate the "Use of New Pinless Artificial Teeth."

There will also be Clinics by other well-known dentists.

Thursday, 1 o'clock p. m.—Adjournment of morning session.

Thursday, afternoon session, Union Hall, 2 o'clock p. m.—Miscellaneous business.

Thursday, 2.30 o'clock p. m.—Paper by Dr. C. A. Brackett, Newport, R. I. Subject, "The Relations of Medicine and Dentistry."

Thursday, 3.30 o'clock p. m.—Discussion, "The Effect of Acid Medicines upon the Teeth." Discussion opened by Dr. G. W. Weld, New York City.

Thursday, 4.30 o'clock p. m.—Paper by Dr. Geo. W. Beers, Montreal, Canada. Subject, "Irregularity from Thumb and Tongue Sucking."

Thursday, 5.30 o'clock p. m.—Discussion. Subject, "Methods of Bridge Work." Discussion opened by Dr. E. Parmly Brown, Flushing, N. Y.

Thursday, 6.30 o'clock p. m.—Adjournment of afternoon session.

Thursday, 7.30 o'clock p. m.—Social gathering with banquet or collation.

The committee are busy perfecting arrangements for this social gathering and hope to make it one of the pleasantest features of the meeting. Due notice will be given at each session of the place of meeting and other particulars.

Friday, Oct. 7, Union Hall, 9 o'clock a. m.—Miscellaneous business, selection of place for next annual meeting, election of officers.

10 o'clock, a. m.—Discussion. Subject, "Methods of Regualting Teeth."

Dentists are invited to bring and present models of cases treated, and appliances used, for it is expected that this subject will be one of the most interesting of the meeting.

11 o'clock, a. m.—Paper by Dr. G. A. Mills of N. Y. City. Subject, "A Safe Use of Chloroform."

12 o'clock, m.—Discussion. Subjects, "Treatment of Pyorrhea Alveolaris." "Treatment of Acute and Chronic Alveola Abscess."

1 o'clock, p. m. Induction into office of officers elect. Final adjournment.

A. M. DUDLEY,
Secretary.

A MEMBER: I move that the report be accepted and that the printed programme be adopted. Carried.

DR. SEARLE: Any other committees to report?

DR. SHEPARD: I would like to announce that the Executive Committee have made arrangements for a dinner, or lunch, at the Parker House, to-night, and would ask that members purchase tickets of any of the Executive Committee as early as possible, so that we may know about how many to provide for.

DR. SEARLE: Any applications for membership?

DR. DUDLEY: I have applications for membership from the following. The names have all been acted upon favorably by the Executive Committee, and after I have read the list I will move that the secretary cast a ballot for the society for the admission of the gentlemen, each name to be balloted for separately, and then any member having any objection to any name can cause the said name to be balloted for by the meeting:

John F. Dowsley, D. D. S., Boston, Mass., Active Member.
Chas. F. McDonald, D. M. D., " " "
Geo. F. Cheney, D. D. S., St. Johnsbury, Vt., " "
Geo. A. Lowe, Rockport, Mass., Junior Member.

DR. GILSON: If there is no objection, I will now proceed to cast a ballot for the election of each of the above named gentlemen. (All elected.)

DR. SEARLE: Any other unfinished business?

DR. CLEMENTS: The Committee of Investigation, appointed two years ago, will make a report of progress and ask for further time. We will report in full later during the meeting.

A MEMBER: I move that the report be accepted and that further time be allowed them. Carried.

Dr. Dudley: Owing to the interstate law, I have been unable to do anything with the railroads about reduced fares.

Dr. Searle: Any communications?

Dr. Dudley: Dr. J. P. Parker, of Bellows Falls, Vt., writes that owing to his removal from the state, he would like to have his name dropped from our books. I have asked the treasurer how he stands, and he has informed me that he is all clear on his books. I would move that his request be granted. Carried.

Letters of inability to be present were received from the following: Dr. W. H. Atkinson, New York city; Dr. Geo. F. Reese, New York city; Dr. A. L. Northrop, New York city; Dr. W. H. H. Thackston, Farmville, Va., Dr. G. H. McCausey, Janesville, Wis.; Dr. E. C. Baxter, Albany, N. Y.; Dr. R. Finley Hunt, Washington, D. C.; Dr. C. R. Butler, Cleveland, Ohio; Dr. R. B. Winder, Baltimore, Md.

Dr. Dudley: I would move that the transactions of this meeting be preserved in print, as a memento of this our 25th Anniversary, and that each member have a copy sent him. Carried.

I will now move that a committee of three be appointed by the Chair, to prepare the memorial volume, and that it include the Constitution, Rules, By-Laws, List of Officers, Members, etc., the committee to have full powers. Carried.

Dr. Searle: I should much prefer that your President appoint this committee, and will therefore let him make the appointment.

Dr. L. D. Shepard: I will now move that the paper of Dr. G. A. Gerry be specially assigned to this evening at 8 o'clock. It will, I know, be very interesting, and I want the Doctor to have a good audience. Carried.

Dr. Searle: The next paper is by Dr. Theodore F. Chupein, of Philadelphia, Pa., subject: "Copper Amalgam." Discussion will be opened by Dr. Ambrose Lawrence of Boston, Mass. Is Dr. Chupein p.esent?

Dr. Dudley: I have just received the following letter from Dr. Chupein:

1408 Pine Street, Philadelphia, Pa.,
Oct. 2, 1887.

Dr. A. M. Dudley, Salem, Mass.—

Dear Doctor: I received the copies of the invitations to the "Silver Wedding" of the New England Dental Society which, doubtless, I am indebted to your courtesy for.

The programme of papers and clinics is such that it would be a real pleasure to me if I could attend, but this I cannot do. * * Should you have the transactions of the society published I would be much obliged if you would send me a copy, as there are several papers which from their titles I would like to read. Trusting you may have an instructive and pleasant meeting, I remain,

Respectfully yours,

THEODORE F. CHUPEIN.

By the same mail I received his paper, and if you will kindly excuse errors I will endeavor to read it.

COPPER AMALGAM.

By Theodore F. Chupein, D. D. S., Philadelphia, Penn.

For many years I had noticed that amalgam that turned black in the mouth appeared to be free from shrinkage. There never was in any such fillings, that bulging or protrusion around the edges of the cavity, so revolting to look at, so suggestive of the accumulation of food in such localities, and so suggestive of decay setting in around these protruding points of the filling as we see in amalgams which hold their color better. I have often, from these indications, removed such fillings, feeling satisfied that there must be decay; yet I am free to confess, that in the large majority of cases where I had removed such fillings (with the supposition that decay existed at these points) I have been mistaken; so that, despite the bulging, despite the overhanging edges, despite the revolting appearance, I found the amalgam preserving the tooth.

That amalgam has therapeutic virtues I have no doubt from these facts; and it has been suggested that through the action of the saliva or mucus on such fillings "corrosive sublimate" might be formed, and if so decay averted and microbes killed.

I did not know at that time that this discoloration was due to the presence of copper in the alloy. I endeavored, whenever I saw such amalgam fillings, to trace them to the operator and find out what amalgam he used, as I was satisfied that such fillings (apart from their color) were good, and I thought better than other amalgam fillings which held their color well; but I cannot say that I was successful in my search. How I found out that this freedom from shrinkage was due to the presence of copper I know not, but

recognizing the advantages of copper amalgam I have used it for a long time in all localities where I thought it indicated.

For some eight or nine years, I think, I have made use of what is known as "Sullivan's cement." This is an amalgamation of copper and mercury. It is also known as "Sullivan's copper amalgam," and is sold in London, England, by Messrs. C. Ash & Sons. At present it can be obtained in New York, at the agency established by Messrs. Ash. Before the establishment of this branch house, however, I could only obtain it by ordering it from England through the mails. This gave me much trouble, for on one occasion I received a notice from the custom-house authorities, advising me to present myself and explain why I had presumed to make use of the mails for illicit purposes, bringing goods into the country that were subject to duties? My plea, that I was ignorant of doing wrong, (since Messrs. Ash had advised me it could be sent through the mails) that the goods were only meant for my own use and not intended to sell again, that they were not manufactured in this country and consequently did not interfere with any manufacturing interest, availed nothing, so that after a considerable amount of "Red Tape" I obtained my paltry order of four or five ounces of Sullivan's cement. After this I either obtained it through the "S. S. White Dental Man'f'g Co." or by other means.

About the year 1880, a discussion was brought about before the "Odontological Society of New York" where copper amalgam received most favorable endorsement, and on referring to the pages of the "Dental Cosmos" Vol. 28 (1880) pages 196 and 367, the remarks made on it may be seen. Dr. Bogue there gives the manner of preparing this copper amalgam which he obtained from Dr. Rodgers of England.

I immediately endeavored to make some according to the directions set forth by Dr. Bogue, but whether from faulty manipulations or from whatever other cause I never obtained any good results, and therefore continued to send for and use "Sullivan's cement."

I propose in this paper to give detailed instructions as to how copper amalgam may be made, having obtained the information from my friend, Dr. W. H. Trueman, who has given the subject considerable experimentation. But while I do this, I will say in the offset that "*Le jeu ne vaux pas la chandelle*," which in other words means that it gives so much trouble, (to say nothing about the dirty work attendant) that I do not anticipate that many dentists will undertake to make it for themselves.

The implements needed will be as follows:

1 glass jar of one gallon capacity, (one such as is used by confectioners to keep candy in is good.)
1 glass or wedgewood mortar (about four inches in diameter.)
1 small round bottom wrought iron ladle.
1 pair large flat nose pliers.
1 large bench vise.
1 piece Chamois skin (about sixteen inches square.)
1 small wood spoon.
1 porcelain evaporating dish.
1 sheet of stiff brown paper.

MANIPULATION.

Dissolve 25 dwts. of sulphate of copper in one gallon of water; put in the vessel in which the solution is made about one ounce of mercury. Suspend in the solution, by means of a string, a piece of iron, and let it remain until the liquid changes from a blue to a green color. This may take from two to three days. The change is hastened somewhat by occasionally scraping off the copper which adheres to or is precipitated against the iron; this is readily done with a knife or spatula, without removing the suspended iron from the solution.

The next step is to pour off the solution. The precipitate is then transferred to a mortar and well rubbed up. If necessary add sufficient mercury to the precipitated copper to form it into a very soft paste, to facilitate the washing process.

The next step is to thoroughly wash this amalgamation of mercury and copper with warm water, rubbing it up with the pestle to remove all dirt. The mass requires considerable washing to get it clear. Three or four washings with vigorous rubbing with the pestle are not too much to remove the dirt.

The next step is to remove the washed mass from the mortar to a porcelain evaporating dish, in which it is boiled for a few minutes with about one fluid ounce of hydro-choloric acid. The object of this being to remove all traces of the iron which may have been given off while being suspended in the copper solution, or which may have found its way into the precipitate when scraping the adhering copper from it.

The acid is then poured off and the mass again thoroughly washed with hot water—not too hot, hot water frequently cracks a porce-

lain or glass mortar,—rubbing it as thoroughly in the mortar with the pestle as before.

The next step is to squeeze the mass through chamois skin: for this purpose a paper apron is made, of stiff brown paper, the two sides and end being folded and pasted, or cemented together with adhesive wax, so as to form a receptacle to catch the exuding mercury; the other end of this paper apron is placed loosely between the jaws of the bench vice. About a teaspoonful of the mass is now taken from the mortar and placed with the wood or bone spoon in a piece of chamois skin. The skin is doubled over it, and one end of the skin placed in the jaws of the vice between the paper apron. (Should the operator be indifferent as to the recovering of the exuding mercury the paper apron may be omitted). The other end of the skin is seized with the pair of flat nosed pliars, and the skin is twisted harder and harder until all the mercury possible by this procedure is removed, the exuding mercury being caught in the paper apron. When no more mercury can be thus expressed, the skin, with the enclosed mass, is placed between the jaws of the vice and subjected to still heavier pressure by means of the vice. All of the exuding mercury may be used again. The mass thus treated is removed from the skin and placed aside on a piece of paper, in a box or any receptacle. The remainder of the mass, in the mortar, is treated in the same way as has been described, a little at a time, until all of it has been rendered comparatively stiff by the squeezing process. It is then placed into the iron ladle and thoroughly heated and stirred during the heating with an iron rod. It is well to understand that this heating should not be carried to such a point as to vaporize the mercury. The object of this heating is to expel the moisture from the mass, which if not done would cause the pellets to splutter, crack or fly off when heating them at the chair, for insertion into the cavity of the tooth.

The mass is again returned to the mortar, after it has cooled down in the ladle, and thoroughly triturated, when it becomes quite fluid. It is again squeezed through chamois skin, a little at a time as before described, to get rid of more mercury. When it has all been squeezed a second time, it is again heated in the iron ladle, and again triturated in the mortar, and again squeezed a third time through the chamois skin. These squeezings appear to be enough to expel all the mercury necessary. After the third squeezing it is again conveyed to the ladle and warmed, and while in the ladle it is made into a comparatively stiff mass by rubbing it up with a pestle.

(It is for this purpose that a round bottom ladle should be used). When thus made somewhat plastic it is removed from the ladle, allowed to cool and then formed into small pellets, about the size of a pea, for use at the chair. The pellets should get quite hard in about twenty-four hours. If they do not harden in this time too much mercury has been permitted to remain in the compound. To remedy this it will be necessary to heat them again in the iron ladle, rub them up again with the pestle, and when cooled squeeze out a little more mercury, and make again into little pellets.

For use at the chair, sufficient of the pellet is taken and placed in an iron teaspoon (if the iron teaspoon has been tinned, as they frequently are, all the tin should be burned off by heating it red hot) and heated. When this sweats mercury in small globules it is thrown into a small mortar (such as all dentists have to rub up amalgam in) and rubbed up like any other amalgam. The mass is then removed from the mortar and formed into a small pellet with the fingers of one hand into the palm of the other. It is then rolled about in the palm with the finger until it becomes quite plastic. In this condition it may be placed into the cavity of the tooth in small pieces, packing them away in all depressions or undercuts. In crown cavities and cavities of easy access I use a small piece of the very plastic, and squeeze the remainder. I place the piece of the very plastic in the cavity, and add what has been squeezed to it. It is all squeezed before putting it in the cavity; it is very dry, flaky and crumbly, and not so easily worked. In the manner here suggested it will generally harden sufficiently to be chewed upon in four or five hours.

In cavities difficult of access I do not squeeze any part of it, but place it in the cavity in its plastic condition. As far as my observation goes, as to its behavior, it does not seem to make any difference about this squeezing before introducing it in the cavity. In such cavities where it is difficult or impossible to apply the rubber dam, absolute dryness does not seem to interfere with its working or its merits. I will say that I always prefer to apply the rubber dam, and I may say also that I have noticed that it may be put in localities where the nerve is nearly exposed, with more chance of success than with any other metal filling. These cases are, however, only desperate cases, and I always, whenever practicable, protect the nearly exposed pulps with a covering of some non-conducting material. In cavaties of easy access I think it is better to subject a part

of it to a squeezing, as it is then not in such semi-fluid condition as it might be if not so treated.

There is no waste in this amalgam, for the pieces not used may be kept and used again by re-heating. If, however, such pieces as have been kept, are found to be too dry and crumbly for use, it will only be necessary to add a very small quantity of mercury, from the mercury holder, to make the pellet plastic enough to work.

It will sometimes be found that when rolling a large pellet in the palm of the hand with the fingers, it remains dry and crumbly, and any amount of rolling fails to make it as plastic as it is needed. When this is the case, if small pieces are broken off from the large pellet, and these rolled into small pellets they soon become as plastic as necessary.

Copper amalgam is very smooth and is worked with great facility. When polished up, at some subsequent visit of the patient, it presents a beautiful smooth surface, though of a glossy black. In teeth that are subject to much use it does not turn black but is kept of a fair color. The discoloration seems very superficial, since a few turns of a wood polishing point charged with fine pumice restores it to a bright silver-like color. In a very few instances I have noticed a staining of the teeth bone; but in the very large majority of cases I have failed to detect the least discoloration.

It will sometimes happen that the mercury will not amalgamate in the glass jar with the precipitated copper. This is observed sometimes when the solution is decanted off and the residue is squeezed through the chamois skin, when nothing will be left but the precipitated copper. The mercury having been saved when it was squeezed out of the residue, it will only be neeessary to put the precipitated copper in a small wedgewood mortar and pour on this about a teaspoonful of sulphuric acid. Rub the precipitate well with the acid, and then add the mercury that was squeezed out, when the copper will immediately amalgamate with the mercury. The blue stone used for the purpose of obtaining the copper precipitate should remain in the jar with the water and the piece of iron suspended in it, about six or seven days.

Dr. Searle: Gentlemen, the paper is before you for discussion. I will call upon Dr. Ambrose Lawrence, of Boston, to open the discussion.

Dr. Ambrose Lawrence: Mr. President and Gentlemen of the New England Dental Society: My first duty is to thank you for the honor you have conferred upon me in inviting me to be

present with you to-day, and to make a few remarks upon the paper on "Copper Amalgam," to which we have just listened. The subject is not new. I recognize in it an old tramp, familiar to the profession in the countries of Europe, especially in England, where this particular grade of plastic filling has been in use for many years, but, as I believe, has been largely superceded by other varieties.

Our English professional brethren have not thought that an amalgam made of pure copper and pure mercury is so good that nothing better can be and is made. In the paper here presented little appears excepting the method of preparing the filling, and it is but just to admit that in this the respected writer has been explicit: though another method, that of preeipitating the copper from its solution by a battery into and upon the mercury is quite feasible, and a preferable method. But the *modus operandi* is hardly debatable, and nothing remains but to briefly examine the arguments presented in favor of this variety of amalgam, a stranger in a strange land, and if justice has been denied I doubt not when understood will be appreciated to the full extent of its just claims.

The writer says that "for many years I had noticed that amalgam that turned black in the mouth, appeared to be free from shrinkage."

It cannot be that the writer means that the quality of turning black is a special or invariable indication of excellence in amalgams, for the great complaint has been that such fillings do turn black in the mouth. If copper amalgam is "free from shrinkage" there must be something else than the black color to account for it, and it is possible that most amalgams now in use if subjected to the same treatment as this copper preparation would show similar results.

But is the "bulging or protrusion around the edges of the cavities" due to shrinkage? To me the proposition seems to lack confirmation. It is not a reasonable solution of the phenomena, nor in harmony with the laws governing crystalization. Any amalgam, copper ores included, if prepared quickly and not allowed to undergo the hardening process before being placed in the cavity of a tooth, will present this "bulging," but if the dentist can afford the time to mix the amalgam slowly, and crush the mass several times as it tends to harden or crystalize, there will be no "protrusion," or ronnding out and over the edges of the cavity in the majority of cases, whether the amalgam remains white or turns as dark as night. An amalgam filling manipulated in the manner indicated will not become as hard as it would be if allowed to harden

at once. The copper and mercury preparation is no exception, and it will be found that after taking one or more of the pellets of copper amalgam, placing it in a spoon and heating until globules of mercury appear on the surface, then crushing and grinding to a plastic mass in a mortar, such a filling will never become as hard as the original pellets. That copper amalgam will save a tooth as well as any other filling, if skillfully used, there can be no question, and in admitting so much in all fairness I must insist that the manner of preparing, skill in the operator, and the conditions under which any of the plastic materials are used, have much to do in insuring satisfactory results.

The writer shows in every line of his paper a commendable degree of candor, and for that reason, as well as for his known professional attainments, no one can indulge in any but the kindest feelings toward him, and it is to be hoped that at some future time he will favor the profession with a solution of the question, Does shrinkage cause the enlargement or "bulging" in amalgam filling?

As I am, and have been for years, a manufacturer of an amalgam, you will kindly pardon me for not desiring to pursue the matter before us further.

The consideration of the methods of one amalgam implies a consideration of them all, that is your privilege, and thanking you for your forbearance, I submit the paper for your superior judgment and fuller discussion.

The discussion was continued briefly by the following named gentlemen: Dr. E. Page, Charlestown, Mass., Dr. C. G. Davis, Dr. F. Searle, Dr. T. Fillebrown.

As the members were drifting away from the subject under discussion, it was voted at 5.15 to pass the subject, and take up "Incidents of Office Practice."

The following gentlemen cited cases in their own practice: Dr. L. D. Shepard, Dr. Geo. F. Waters, Dr. W. H. Shattuck.

At 6 o'clock it was voted to adjourn till 7.30 o'clock, P. M.

FIRST DAY—EVENING SESSION.

Union Hall, Boylston Street, 7.45 P. M.

Dr. Dudley: The President, pro tem., Dr. Searle, not being present it will be necessary to choose a new one. Please to nominate.

On motion, Dr. D. B. Ingalls of Clinton, was elected.

Dr. Ingalls in the chair.

Dr. Dudley: I have applications for membership from the following: The names have all been acted upon favorably by the Executive Committee, and after I have read the list I will move that the Secretary cast a ballot for the society for the admission of the gentlemen, each name to be balloted for separately and then any member having any objection to any name can cause the said name to be balloted for by the meeting.

G. L. Bennett, Winchendon, Mass., junior member.

H. J. Collins, Boston, Mass., junior member.

E. S. Taylor, Boston, Mass., junior member.

W. P. Noyes, D. D. S , Brookline, Mass., active member.

Dr. Gilson: If there is no objection, I will now proceed to cast a ballot for the election of each of the above named gentlemen. (All elected.)

Dr. Ingalls: The time has arrived for the paper of Dr. L. D. Shepard of Boston, Mass., subject: "Laws for the Regulation of Dental Practice."

LAWS FOR THE REGULATION OF DENTAL PRACTICE.

(By L. D. Shepard, D. M. D., Pres. of the Mass. Board of Registration in Dentistry.)

It is a cardinal principle in political economy that industry is the great preventer of poverty and crime, and that there should be great caution in legislation to interfere as little as possible with the freedom of people to earn their living in any honorable way that each may select.

Most civilized states, however, have adopted the principle that it is wise and proper for the state to exercise a paternal care over the people in respect to health.

Recent times differ from the olden, not so much in the principle as in its more extensive application. The protection of the community by law from certain scourges, like leprosy, date back many years.

Sanitary science, as a science, is new, and the laws which have grown out of its study are of recent enactment. Now it is not considered enough that I have put my own house in order. The neglect or cupidity of my neighbor may cause a nuisance in his house which will contaminate my own.

The law steps in to protect me and insists that he also must put his house in order or vacate it.

No plumber in Boston can cover his work from sight till a duly appointed inspector paid by the city has pronounced it done in a proper and workmanlike manner. Hence we feel reasonably safe and acknowledge the interference of the law with private interests as right and wise.

The most enlightened countries have decided that the teeth are important to good health, and have enacted laws which aim to protect them from injury at the hands of the unqualified and unskilled.

It is one of the fundamental principles of all such legislation that what are called *ex post facto* laws are unjust and unconstitutional.

A man engaged in an honorable occupation, though his attainments are few, his skill of a low order, and his work poor in quality has a vested right in that occupation by which he earns his daily bread which the state has no right to take from him. It may take his property by right of eminent domain, by giving him a fair money equivalent, if the general good demands it, but the state cannot forbid him to continue in an occupation which is honest and honorable and in itself not injurious to the public good. But it is competent for the state to legislate for the future, to decide what condition and acquirements and skill are requisite to enter in the future upon a given occupation. The state also can set in operation machinery for the execution of such laws and penalties for violation.

The laws of all states in regard to dentistry are of this character.

The first law in Massachusetts was passed in 1883 mainly through the efforts of a committee appointed for that purpose by the Massachusetts Society. It was unfortunate that the distinguished gentleman who was Governor at that time was induced by persons inimical to the law to veto it. His chief reason for so doing was that he did not believe in class legislation, but did believe in the

divine right of every person to be humbugged. I do not think he has since been proud of that veto message.

During the following years, state after state enacted laws to regulate dental practice, until Massachusetts usually the foremost in wise legislation, was becoming the dumping ground for the refuse of other states.

Dental legislation was in the air, and the contagion finally spread here so that the law at present in force was enacted last winter and wisely approved by His Excellency, Governor Ames.

The State Society, and the profession throughout the state, were largely indifferent and did but little to aid the cause. Whatever may have been the motive of the dentist who was chiefly instrumental in securing the enactment, I have never failed in any place and at any time to give him freely the credit which is his due. I am sorry he has seen fit to attack me by name, in the pages of the most widely circulated dental magazine in the world, for a reporter's unrevised account of remarks made by me before the National Association of Dental Examiners. I was not responsible for the inaccurate report, and I challenge him or any one to assert that I have ever spoken disparagingly of his work last winter. But little known and almost alone he went about the work which others had neglected, and secured the result in which we all rejoice.

The main features of the law are:

1. For the appointment and organization of a Board of Registration to consist of five dentists.

2. For the registration of all dentists who were in practice at the time of the approval of the law.

3. For the examination by the Board of all persons not in practice on April 1, 1887, who wish to enter upon dental practice.

4. Making it a misdemeanor to practice without complying with the provisions of the law, and specifying the penalty for violation.

The main work of the Board so far has been the carrying out of the provision of Sect. 3 of the law.

The Board has decided to interpret that section liberally, and so have in nearly every case granted certificates of registration to those who have made sworn affidavits that they were in practice on April 1, 1887. There have been a number of such certificates granted, which the Board might have withheld if it had thought it wise to go back of the sworn statements. To do so would have been practically to charge the persons with perjury. The Board decided that such action could not be taken by it, without the fullest investiga-

tion and most positive proof. It therefore considered it wise and prudent to leave such investigation for future judicial action, to be brought by any one who felt aggrieved. The Secretary will, in a few days, in accordance with the vote of the Board, publish a list of all who have been thus registered. The future work of the Board will be confined to Sec. 4.

The Board is unanimous in the view that this section could be improved. The statute reads that "the Board shall examine applicants, with reference to their knowledge and skill in dentistry and dental surgery, and if the examination of any such person or persons shall prove satisfactory to said Board, the Board shall issue to such persons as it finds to possess the requisite qualifications, a certificate to that effect, in accordance with the provisions of this act."

The law leaves to the Board the determination of the scope and thoroughness of the examination. It is competent for the Board to vary the scope and thoroughness of the examination for different applicants. For instance, a certain scope and thoroughness for graduates of the Massachusetts colleges, in respect to each of whose graduates it can have intimate and positive knowledge, without any examination; another scope and thoroughness for graduates from colleges from other states, and still another for those who have not had college advantages.

The Board feels that it would leave itself open to very grave and serious criticism and charges of favoritism if it decided to so vary its examination to each individual case without specific authorization in the law.

The laws of 30 out of 33 states having dental laws make a distinction between graduates and non-graduates, admitting graduates of such colleges as the Board decided to be reputable to registration without any examination upon presentation of a diploma from the college. In these thirty states the Board of each state has to decide the very delicate question of which colleges are reputable and which are not.

The present Massachusetts law has the certain merit that all applicants are placed upon a par, but the board is unanimous in the opinion that a law whose aim is to secure the protection of the public from ignorance and incompetence by the higher education and qualification of these entering in the future upon dental practice, should specifically recognize and encourage in its law collegiate professional education, especially as the state has in active and use-

ful operation two dental schools, where work is most thorough, and whose high standing is above question—the dental school of Harvard University, and the specially chartered Boston Dental College.

The point has been made that it is no more unfair to ask the dental graduate to pass an examination before a state board for license to practice dentistry, than to require the graduate from a law school to pass a similar examination for admittance to the bar, before examiners appointed by the court. In answer to this it may be said that students of the law can be, and are still very generally thoroughly qualified in private offices, that the law school is not yet considered essential to their education, while the reverse is true of dental students.

It is universally considered that anatomy, physiology, chemistry, surgery, materia medica, therapeutics, etc., cannot be thoroughly taught outside of schools especially equipped for that purpose, and that in private offices there can be obtained only manipulative skill and a very meagre smattering of these fundamental educational principles.

It is also a deplorable but undoubted fact that there are dental colleges in this country which practically sell their diplomas for money to those unqualified.

The Board would respectfully suggest an amendment to section 4, which in its opinion would make the Massachusetts law superior in this respect to the law of any other state, by inserting before the last sentence of section 4, commencing "all certificates issued by said Board," etc., the words, "provided that in cases of graduates of dental colleges the Board may accept diplomas and other evidences of qualifications to such extent as the Board may deem advisable in modification of its examination."

Those who have had most experience with the average legislator and the average legislature assure me that it is an undertaking of doubtful issue to go before them with a proposition for the amendment of a law.

The student of a subject has a clear and distinct idea of what is needed, but it is a different matter to convince the legislature made up of such heterogeneous elements that he is right, and induce it to enact what he proposes. I am told "it is better to bear the ills we have, than fly to others we know not of."

While there is no doubt the law could be improved it may be dangerous to attempt it. I have presented the arguments in favor

of an amendment. As one interested in education for so many years I would rejoice to see professional education endorsed by the state. But I am free to add that I would not advocate such an attempt if it would put the present advanced position in jeopardy.

The state has left large discretionary power to the Board. I am confident that the Board as at present constituted have the courage to exercise all its rights, and will take and maintain any stand which may be approved by the profession at large.

Should the Board feel confident that the profession would approve its decision to make a marked distinction, as it can do if it pleases, between the examination of graduates whose record in the college was excellent, and those of whom it knows nothing, I am confident the Board will do it, and so by its variations of the scope and thoroughness of the examination practically accomplish all that the proposed amendment would secure in recognition of professional collegiate education.

If any attempt is to be made to have the law amended the initiative should come from the state society, and not from the Board.

Should the society deem it unwise to attempt it this year let the proposition end here. Should the society approve of the suggestion, that a discrimination should be made between the examination of the graduate and the non-graduate, it might be well to so express it, and the Board would appreciate such approval.

The Board is the servant of the state, to execute its law. It had no hand in the formulation of the law, and it does not assume by virtue of its office to be a dictator to the profession. It is responsible under oath, only, to the state. But while the Board is responsible to the state, the pulses of each one of its members beat in unison with yours. As an officer he does his duty to the state; as an individual his labors for the present and his hopes for the future are bound up with yours in all efforts for the elevation of the profession and the higher education of each individual member of it.

Dr. Ingalls: Gentlemen, the paper of Dr. Shepard is open for discussion.

The following gentlemen asked Dr. Shepard questions concerning the working of the present law in Massachusetts: Dr. Waters, Dr. Hayward, Dr. Stevens, Dr. Gerry, Dr. Peabody.

A Member: I move you that the subject be passed and that we now listen to the paper by Dr. Gerry.

Dr. Ingalls: I now have the pleasure to present to you Dr. G. A. Gerry, who was one of the originators of this society.

EARLY HISTORY OF THE NEW ENGLAND DENTAL SOCIETY, WITH STATISTICS TO THE PRESENT TIME.

By G. A. Gerry, D. D. S., Lowell, Mass.

In the autumn of 1863, the writer of this, while in conversation with Dr. Ambrose Lawrence, then a practitioner of dentistry in Lowell, the subject of Dental Societies was mentioned, and, finally, we earnestly discussed the question of the formation of a society in our vicinity, there being none then in existence to our knowledge in the New England States. It was finally decided between us that we would call a meeting of the Lowell dentists at my office, ostensibly to discuss the question of "Vulcanite Patents," this subject being then of great interest to all, hoping thereby to get a full attendance that we might further our project of forming an association of dentists in the Merrimack Valley.

The meeting was called, and every dentist then practicing in Lowell was present.

Dr. Ambrose Lawrence was made chairman, and G. A. Gerry Secretary.

The "Vulcanite question" was fully discussed, and near the close of the session a motion was introduced and carried, that the Chairman and Secretary of the meeting be authorized to invite their professional brethren, practicing in the Merrimack Valley and vicinity, to meet with them in Lowell, on Oct. 29th, to take into consideration the subject of forming a dental association. Accordingly circulars were sent out to all practitioners we knew, or could hear of in our vicinity, and the result was the assembling together on the above date of the following named dentists: A. Lawrence, S. Lawrence, S. L. Ward, W. G. Ward, W. D. Vinal, A. T. Johnson and G. A. Gerry of Lowell, Mass.; E. G. Cummings of Concord, N. H.; D. K. Boutelle, E. F. Rogers, C. Heath and O. M. Carleton of Manchester, N. H.; F. J. Stevens and S. H. Elliott of Haverhill, Mass.

Dr. A. Lawrence called to order, and he was chosen temporary chairman, with W. G. Ward as temporary secretary. The following resolution was then adopted:

Resolved, That we form ourselves into an association, under the name and style of the Merrimack Valley Dental Association.

A constitution, which had been prepared by Dr. Lawrence and myself was reported by a committee appointed for that purpose, and was adopted. This constitution provided, of course, for the election of officers, and the following were then elected, according to its provisions:

President, A. Lawrence of Lowell.

Vice-Presidents, D. K. Boutelle of Manchester; S. H. Elliott of Haverhill and E. G. Cummings of Concord.

Recording Secretary, G. A. Gerry of Lowell.

Corresponding Secretary, L. F. Locke of Nashua.

Treasurer, S. Lawrence of Lowell.

Executive Committee, E. F. Rogers, C. Heath, F. J. Stevens, S. L. Ward, J. Kidder.

It will be observed that two names are in the list of officers who were not present at the meeting, viz.: Drs. Locke and Kidder. We were assured, however, that they would unite with us, and they were elected to membership.

The President, on taking the chair, addressed the association at length on the rise and progress of dentistry, and closed with this sentence: "Let us take high professional ground, and with '*Labor omnia vincet*' for our motto, never fear that our efforts will be crowned by abundant success," which words it seems to me in looking back over the twenty-four years of our existence as a society, were prophetic.

All attending this meeting dined at the Washington House, by invitation of the Lowell members.

The list of subjects adopted for discussion at the next meeting were as follows: "Dental Etiquette," "Filling Teeth," "Vulcanite Work," "Nitrous Oxide," "Dental Fees" and "Mechanical Dentistry." Rather a formidable array, but it was evidently the intention that material should not be lacking.

The Secretary was instructed to furnish the proceedings and President's address to the dental magazines for publication, and to furnish at least one paper in each town in the Merrimack Valley, where a paper was published, with the fact of the formation and officers elect of the association.

Thus ends the history of the first meeting, to which I have given much time, but thought a detailed account of our beginning would be of interest.

Our Constitution providing for semi-annual meetings, an adjournment was made to meet in Lowell, May 5, 1864.

On the above date the following new members were admitted: Drs. G. A. Young of Concord; Colcord, Kimball and Porter of Lawrence; Smith of Claremont; Locke of Nashua and Adams of Worcester.

A code of by-laws was adopted (practically the same now in force.)

The following resolutions were adopted:

Whereas, Dentistry is now firmly established as among the learned and useful professions, therefore

Resolved, That it is the duty no less than the interest of every dental practitioner to endeavor by all honorable means to elevate the profession to which he belongs.

Resolved, That in acting on the golden rule towards each other we shall best promote that respect for others, as well as for ourselves, which all right minded men ought to enjoy.

Resolved, That uniform kindness and charity are best calculated to strengthen the bond of union among us.

Resolved, That the too prevalent practice of selling our services, like the town's poor, to the lowest bidder, or in other words, in offering to serve the patient for a less consideration than any one else, is calculated to breed strife among ourselves, and bring the profession into disrepute.

Resolved, That it is manifestly for the interest of every dental operater, as well as for the public, that so far as possible a uniform tariff of fees be established and rigidly maintained.

These resolutions resulted in the adoption at the next meeting of a uniform tariff of fees.

Dr. A. Lawrence read a paper on "Dental Etiquette."

Prof. Taft, of Cincinnati, was a guest of the Association, and addressed them on "The Advantages of Associated Effort."

It was voted expedient to publish a pamphlet, instructing the public in relation to the care of the teeth, but for some reason not given this book was never published: and thus the public were deprived of that which might have been of great value.

The third, which was the annual meeting, was held at the Council Chamber, City hall, Manchester, N. H., Nov. 3rd, 1864. The officers of the preceding year, with slight changes in the Executive Committee, were elected.

Drs. A. Lull of Nashua, and W. P. Kelley of Franklin, N. H., were elected active members, and Dr. I. J. Wetherbee of Boston, an honorary member.

At this time a great deal of feeling existed in relation to vulcanite patents. The dentists throughout the country having been annoyed

by frequent visits from agents of the American Vulcanite Company, and the following resolution was adopted:

Resolved, That it is the duty of every dental practitioner to patronize no man or firm who are connected, in any manner, with companies or individuals who are attempting unjustly to claim of them remuneration for so-called patents.

This resolution would seem now to partake somewhat of the spirit of "boycotting," but it bore fruit almost immediately, for at the same meeting a communication was received from a Boston firm stating that they had no connection whatever with the American Vulcanite Company.

A resolution was also adopted pledging the support of the Association to the United States Dental Protective Union.

Papers were read by Drs. Lawrence, Boutelle and Cummings.

The fourth meeting was on May 4th, 1865, at the City Council Room, Lawrence. At this meeting J. A. Perkins of Amesbury; E. D. Hayes, J. H. Kidder and E. A. Eaton of Lawrence; W. H. Noyes of Newburyport, and J. Fisk of Clinton, were admitted to membership.

The first death of a member since our organization was announced at this meeting, that of W. D. Vinal of Lowell.

Prof. Wetherbee addressed the meeting on his method of treating exposed pulps.

There were present eighteen members, showing a slow but healthy increase.

The fifth meeting was held at Concord, N. H., on Nov. 2d and 3d, 1865. This was the first meeting were the sessions were continued two days. Four were admitted to membership.

Dr. Kidder read a paper on the "Mutual Relations of the Dental and Medical Professions." Prof. Atkinson, who was a guest of the society, gave a lecture on Root Filling where alveola abscess had existed.

A paper by Prof. McQuillen on "Dental Education," was read, which is published in full on page 312, vol. 7, of Dental Cosmos. By invitation of Dr. Cummings, the association were entertained, socially, at his residence.

The sixth meeting was held in Lowell, May 3, 1866. At this meeting seven new members were admitted, two of whom are still members, viz.: Drs. Ingalls of Clinton, and Thos. Palmer of Fitchburg.

Dr. A. Lawrence read a paper on "Conservative Dentistry," which is published in full on page 629, vol. 7, of the Cosmos.

This association has never received much in the book line, but at this meeting they were presented by Prof. Buckingham with bound copies of the Dental Times from the commencement of its publication.

A committee was appointed to prepare resolutions on "Dental Pupilage." They reported a series, the third of which I give to show the advanced position this association took on this subject at this early period:

Resolved, That we look forward to an early day when a graduation at some dental college shall be made one of the requirements of the younger members of our profession for becoming candidates for membership in this association.

Prof. McQuillen delivered a public lecture in the evening on the "Hand and Arm of Man," after which the members of the association were entertained at a social banquet by the profession of Lowell.

The next meeting was held Nov. 1, 1866, in Lowell. Dr. A.W. Howland was admitted to membership, and a paper was read by Dr. I. A. Salmon.

At the next meeting, May 2, 1867, there were ten new members admitted, among whom was our present worthy secretary, Dr. A. M. Dudley. Dr. Ingalls was the essayist, and Profs. Atkinson, Buckingham and Barker were guests of the society.

I recall a discussion which took place at this meeting between Professors Atkinson and Wetherbee on the "Use and Effect of Creasote." The discussion waxed warm, and Prof. Atkinson said, "Brother Wetherbee, I had as lives kick you as to kiss you, or kiss you as to kick you, but truth is mighty and must prevail."

A communication was received from the Massachusetts Dental Society, recommending the publication of a New England Dental Magazine, which was referred to a committee, who reported in favor of the project, but nothing ever came of this first attempt to establish a New England Journal.

At the next meeting at Lowell, Nov. 7, 1867, a resolution was introduced looking to the consolidation of all the New England societies, but the committee to whom it was referred reported it better to continue the local societies, and form a New England society.

At the next meeting the interest in the association had so increased that many who had been on the honorary list expressed a desire to become active members and they were transferred to that list.

At the meeting held at Manchester, N. H., Nov. 5, 1868, the code of ethics, which has since become a part of the by-laws of almost every dental society, was adopted. At this meeting, the first and only little unpleasantness in this association occurred, the following resolution being the cause:

Resolved, By the Merrimack Valley Dental Association, that it will be considered an infringement of the code of ethics for members of the association to present advertisements of a personal character, calling attention to particular kinds of work, or prices for the same, and that members so doing are requested to withdraw the same.

This resolution was adopted, after some hard and personal discussion, and as I introduced it, I received my share of the abuse. It resulted, however, in the withdrawal from the association of a very prominent member at the next annual meeting, but at a subsequent meeting he was re-admitted and became again a very useful member. I cite this solitary case to show how free from contention and ill-feeling our meetings have been.

It would not be possible in the time allotted for a paper like this to follow the history, meeting by meeting. I have done so thus far thinking that the organization and early doings of the association would be of interest enough, not only to the old, but also the younger members, to warrant me in rehearsing them.

Nov. 2, 1871, an attempt was made to change the name of the association to the Eastern New England Association. This failed from the fact that all the old members were attached to the original name, and that the time had not yet arrived for a change.

A joint meeting was held with the Massachusetts Society at Lawrence, June 16th and 17th, 1875.

In November of the same year, a committee was appointed to purchase a Hartnack microscope, which purchase was consummated in 1876, and the instrument has proved of much value to the society.

May 11, 1878, an attempt was made to make the holding of a medical or dental diploma a requisite for membership.

On June 5, 1879, a joint meeting was held in Boston, in connection with the Massachusetts and Connecticut Valley Dental Societies.

Nov. 6, 1879, the name was changed, substituting "society" for "association." The article on membership was also amended,

requiring all persons applying for active membership to be either a graduate from a respectable medical or dental college, or a licenciate from a board of examiners, under state law.

At the meeting, Nov. 4, 1880, at Salem, the Dennett Dental Naboli received attention, and resolutions were adopted condemnatory of it, and of the methods used in bringing it before the public.

Oct. 6, 1881, at the society meeting at Plymouth, Mass., a committee was appointed to act in conjunction with a committee of the Massachusetts Dental Society to secure the passage of a state law regulating the practice of dentistry. This has since been accomplished through other means.

In May, 1882, the name was again changed to New England Dental Society, and the By-Laws were amended, making the holding of meetings annual, instead of semi-annual.

Since the adoption of the new and broader name, "New England," the history of the doings of the society are familiar to you all, and need no repetition by me here.

We have had since our organization 300 members. Of these 20 have died, and 83 have either withdrawn or been dropped from membership, leaving at the present time 197 members. This number includes both active and junior.

There has been 24 honorary members elected by the society; of these five have died, and five have become active members.

Of the 14 members present at the organization, only four remain with us to-day, a majority having passed on to the unknown future, where it is to be hoped, their professional services will not be required.

There has been read before the society 92 original papers, a list of which including the date of delivery and name of author, is appended.

PAPERS READ BEFORE THE SOCIETY.

May 5, 1864, Dental Etiquette, by A. Lawrence.

May 5, 1864, Advantages of Associated Effort, by J. Taft.

Nov. 3, 1864, The Professional Egotist, by A. Lawrence.

Nov. 3, 1864, Duties and Responsibilities of the Dental Profession, by D. K. Boutelle.

Nov. 2, 1865, Mutual Relations of the Dental and Medical Professions, by J. H. Kidder.

Nov. 2, 1865, Dental Education, by J. H. McQuillen.

May 3, 1866, Conservative Dentistry, by A. Lawrence.

May 3, 1866, Hand and Arm of Man, J. H. McQuillen.

Nov. 1, 1866, Conservative Dentistry, by I. A. Salmon.

May 2, 1867, Conservative Dentistry, by D. B. Ingalls.

May 2, 1867, Circulation of the Blood, by W. H. Atkinson.

Nov. 7, 1867, Chemistry, by A. Lawrence.

May 7, 1868, Aluminum for Dental Plates, by S. Lawrence.

May 7, 1868, Artificial Teeth, by J. Clough.

Nov. 5, 1868, Use of Mallet, by L. D. Shepard.

May 6, 1869, Spontaneous Abrasion of the Cutting Edges of the Teeth, by E. G. Cummings.

May 6, 1869, Preservation of the Human Teeth, by J. A. Perkins.

Nov. 4, 1869, Dental Education, by A. P. Stevens.

May 5, 1870, Mechanical Dentistry, by G. A. Gerry.

May 5, 1870, Use of Arsenical Preparations in Dentistry, by E. G. Cummings.

May 5, 1870, Examinations of the Mouth and Fees for Advice, by L. D. Shepard.

May 5, 1870, Wedge and File, by C. G. Davis.

Nov. 3, 1870, Ortheodontia, by I. A. Salmon.

Nov. 3, 1870, Causes of Dental Caries, by C. G. Davis.

Nov. 3, 1870, Charlatans and Empirics, by A. P. Stevens.

May 3, 1871, The Mutual Relations of the Dental and Medical Professions, by J. H. Kidder.

May 4, 1871, Anæsthesia, by J. H. Dickerman.

Nov. 2, 1871, Anæsthetic Agents, by C. G. Davis.

May 2, 1872, Development of the Teeth, by L. W. Puffer.

Nov. 2, 1872, Structure and Development of the Teeth, by G. B. Harriman.

Nov. 2, 1872, Oxy Chloride of Zinc, by A. M. Dudley.

Nov. 2, 1872, The Arthur Method of Preventing Caries, by C. G. Davis.

May 1, 1873, Amalgam and Amalgam Fillings, by J. H. Kidder.

May 1, 1873, Treatment of First Permanent Molors, by L. D. Shepard.

Nov. 6, 1873, Criticisms on Present Methods of Treating Diseased Teeth, by D. B. Ingalls.

Nov. 6, 1873, The Only Way, or Cheerfulness and Gentleness the Best Evidence of Skill, by A. P. Stevens.

Nov. 6, 1873, Nature and Her Voices vs. Darwin, by I. J. Wetherbee.

May 7, 1874, Elements Necessary to a Successful Dental Practice, by G. A. Gerry.

May 7, 1874, Anæsthesia, by E. B. Goodall.

May 7, 1874, Peridontitis, by G. F. Harwood.

Nov. 5, 1874, Poison from Amalgam Fillings, by C. G. Davis.

Nov. 5, 1874, Dental Education, by I. J. Wetherbee.

Nov. 5, 1874, Nitrous Oxide Gas, by J. A. Perkins.

June 15, 1875, Artistic Elements in Dentistry, by A. T. Bigelow.

Nov. 4, 1875, Exposed Pulps, by D. G. Harrington.

Nov. 4, 1875, Teething, by A. P. Stevens.

May 26, 1876, Teeth of the Next Generation, by L. Rideout.

May 26, 1876, Empiricism, by T. Haley.

May 26, 1876, Medical Education, by T. Fillibrown.

May 26, 1876, The Toothbrush as a Prophylactic, by A. Robertson.

Nov. 2, 1876, Success, by L. W. Puffer.

Nov. 2, 1876, Treatment of Children's Teeth, by L. D. Shepard.

Nov. 2, 1876, Discoloration of Gold Fillings in the Mouth, by T. H. Chandler.

May 3, 1877, Education, by T. H. Chandler.

May 3, 1877, Anæsthetics, by J. Guttman.

May 3, 1877, Cohesive Gold, by T. D. Shumway.

May 3, 1877, Dental Education, by I. J. Wetherbee.

Nov. 1, 1877, Specialists, by G. A. Gerry.

May 11, 1878, New Departure, by L. D. Shepard.

May 11, 1878, Dental Education, by Wm. Jarvis.

Nov. 7, 1878, Microscopy and Histology, by G. F. Waters.

Nov. 6, 1879, Use of Crystal or Sponge Gold, by J. H. Kidder.

May 5, 1880, Care of the Teeth and the Uses and Effects of Tooth Powders, by T. D. Shumway.

May 5, 1880, Experiences of a Young Practitioner, by E. O. Kinsman.

May 5, 1880, Tooth Saving, by C. G. Davis.

May 5, 1880, Failures in Operating, by L. Rideout.

Nov. 4, 1880, Deformities of the Mouth, by I. J. Wetherbee.

Nov. 4, 1880, The Use and Abuse of Arsenic, by G. F. Waters.

Nov. 4, 1880, Dental Progress and Education, by Warren Porter.

May 5, 1881, Mechanical Force, by T. D. Shumway.

May 5, 1881, Equilibration as Effected by the Teeth, by T. Fillibrown.

May 5, 1881, Tooth Extraction and Its Casualities, by A. W. Buckland.

May 5, 1881, Anæsthetics: The Proper Mode of Administering, Symptoms of Danger, Treatment, etc., by A. N. Blodgett.

May 4, 1882, Gold Fillings, by J. H. Kidder.

Oct. 5, 1882, Physiology of Anæsthesia, by W. C. Barrett.

Oct. 5, 1882, Dental Literature, by W. C. Barrett.

Oct. 5, 1882, Irregularities, by T. Fillibrown.

Oct. 5, 1882, Etiology, by T. Stockwell.

Oct. 4, 1883, Dentition, by J. E. Garretson.

Oct. 4, 1883, Pyorrhea Alveolaris; Its Origin, Etiology and Treatment, by G. A. Mills.

Oct. 4, 1883, Embryology, by J. L. Williams.

Oct. 4, 1883, Condition of the Teeth of the People of Switzerland and Italy, by Dr. Terry.

Oct. 2, 1884, Development of the Teeth, by R. R. Andrews.

Oct. 2, 1884, Crystal Gold, by J. F. P. Hodson.

Oct. 2, 1884, A New Method of Filling Teeth, by A. M. Dudley.

Oct. 1, 1885, Root Filling, by J. Guttman.

Oct. 1, 1885, Some Notes on Mechanical Dentistry, by A. W. Burnham.

Oct. 1, 1885, Facts versus Fancies, by E. O. Kinsman.

Oct. 7, 1886, Our Patients as we find them, by Geo. O. Tuck.

Oct. 7, 1886, Reminiscences and Observations, by S. L. Ward.

Oct. 7, 1886, Metaphysical Treatment in Dentistry, by E. N. Harris.

Oct. 7, 1886, Dentistry not a Specialty of Medicine, by N. W. Kingsley.

The following members, whose pictures appear with this paper, have filled the office of President:

A. Lawrence, from 1863 to 1868, inclusive; J. H. Kidder, 1869; A. P. Stevens, 1870; G. A. Gerry, 1871; L. D. Shepard, 1872; D. B. Ingalls, 1873; E. G. Cummings, 1874; A. M. Dudley, 1875; Hiram Hill, 1876; C. G. Davis, 1877; I. J. Wetherbee, 1878; T. H. Chandler, 1879; C. H. Osgood, 1880; R. R. Andrews, 1881; Thos. Fillibrown, 1882; Wm. Barker, 1883; James Lewis, 1884; J. B. Coolidge, 1885; G. A. Young, 1886.

There has been but four Secretaries, viz.:

G. A. Gerry, from 1863 to 1868, inclusive; A. M. Dudley, from 1869 to 1873, inclusive; W. E. Riggs, from 1874 to 1877, inclusive; H. W. Coburn, from 1878 to 1880, inclusive; A. M. Dudley, from 1881 to 1887, inclusive.

1869

J. H. KIDDER.

1870

A. P. STEVENS.

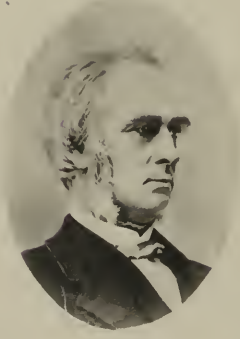
1871

G. A. GERRY.

1872

L. D. SHEPARD.

1863 TO 1868



A. LAWRENCE.

1873

D. B. INGALLS.

1874

E. G. CUMMINGS.

1875

A. M. DUDLEY,

1876

H. HILL.

1878

I. J. WETHERBEE.

1877

C. G. DAVIS.

1879

T. H. CHANDLER.

1880

C. H. OSGOOD.

1881

R. R. ANDREWS.

1883

W. BARKER.

1882

T. FILLEBROWN.

1884

J. LEWIS.

1886

G. A. YOUNG.

1885

J. B. COOLIDGE.

TYPE PRINTING CO., BOSTON

Three have occupied the Treasurer's chair:

S. Lawrence, from 1863 to 1868; H. Hill, from 1869 to 1875; G. A. Gerry, from 1878 to 1887.

There has been 44 meetings of the society held, including the present, 25 annual and 19 semi-annual. We have met in the following places, viz.:

Boston, 11 times; Lowell, 10; Manchester, N. H., 5; Lawrence, 3; Salem, 3; Concord, N. H., 2; Nashua, N. H., 2; Portsmouth, N. H., 1; Dover, N. H., 1; Clinton, 1; Lynn, 1; Plymouth, 1; Portland, Maine, 1; Providence, R. I. 1,; Burlington, Vt., 1.

Let me say, in closing, that the society has ever been one of progress, and no step forward has been proposed but what has eventually been adopted. The requirements for admission to membership have gradually grown more strict. We have taken an advanced position on the question of dental education, and the professional attainments of its members will rank well with any similar society in the nation, or, in fact, in the world.

We have had as guests of the society the most celebrated men the country affords in every department of our profession, and we hope we have profited by their advice and instruction. That the society has accomplished much good there is no question. I think every member would answer, if asked, that he has been benefited by his connection therewith.

The following persons are or have been members of the society:

Adams, J. F.,	Worcester, Mass.
†Adams, C. H.,	Beverly, "
Ainsworth, D. W.,	Ware, "
Ainsworth, G. C.,	Boston, "
Alexander, J. H.,	Mystic River, Conn.
Allen, Wilkes,	Cambridge, Mass.
Ames, G. H.,	Providence, R. I.
Andrews, R. R.,	Cambridge, Mass.
Angell, A. F.,	Newport, R. I.
†Aspinwall, C. T.,	Lynn, Mass.
†Aspinwall, John, Jr.,	" "
†Austin, J.,	Lawrence, "
Barker, Wm.,	Providence, R. I.
†Bartlett, D. S.,	Boston, Mass.
†Bachelder, J. H.,	Salem, "
†Bastian, D. I.,	Clinton, "
†Baker, E.,	Salem, "
Bacon, E.,	Portland, Me.
Baker, G. T.,	Boston, Mass.
Baker, H. A.,	" "
Bartlett, H. P.,	No. Brookfield, "
Bachelder, A. A.,	Westborough, "
Baldwin, C. H.,	Nashua, N. H.
Baldwin, H.,	Nashua, N. H.
Ball, J. W.,	Boston, Mass.
†Bancroft, S. C.,	Lawrence, "
†Bigelow, A. T.,	Boston, "
†Bonney, F. J.,	Portland, Me.
Bowles, W. S.,	Lebanon, N. H.
*Bowdoin, W. L.,	Salem, Mass.
Blanchard, E. O.,	W. Randolph, Vt.
Blake, J. E.,	Amesbury, Mass.
Brackett, E. F.,	Boston, "
Brackett, C. A.,	Newport, R. I.
Branagan, E. W.,	Boston, Mass.
Bridge, W. W.,	Providence, R. I.
*Brown, Ammi,	Boston, Mass.
Briggs, E. A.,	Hopkinton, "
Buckland, A. W.,	Woonsocket, R. I.
*Buckland, L. L.,	Providence, "
Bickford, J. W.,	No. Attleboro, Mass.
Bullock, Chas.,	Cambridgeport, "
Burnham, A. W.,	Lowell, "
Case, I. M.,	Bangor, Me.
Chase, R. M.,	Bethel, Vt.
Chapman, J. W.,	Hyannis, Mass.
Chandler, T. H.,	Boston, "
*Chapman, W. A.,	Salem, Mass.

†Childs, W. F., Manchester, N. H.
Clapp, D. M., Boston, Mass.
Clark, R. O., Marlboro, "
Clement, C. W., Manchester, N. H.
Clements, T. W., Brookline, Mass.
*Clough, John, Woburn, "
Cummings, E. G., Concord, N. H.
Coburn, H. W., Lowell, Mass.
†Cook, R. F., Suncook, N. H.
†Cooke, S. W., Worcester, Mass.
Cook, Geo. L., Milford, "
Cooke, W. P., Boston, "
Coolidge, J. B., " "
Colvin, A. W., Phenix, R. I.
Costellow, S. S., Burlington, Vt.
Coggeswell, Thos., Boston, Mass.
Curtis, W. S., Randolph, Vt.
Codman, J. T., Boston, Mass.
Curtis, J. W., Brunswick, Me.
Curran, W. J., Brockton, Mass.
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Davis, C. G., New Bedford, "
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†Dennett, H. E., Boston, "
Dickerman, D. S., Taunton, "
Dickerman, C. R., " "
Draper, H. S., Boston, "
†Drake, D. F., " "
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Dowling, Oliver, Wolfboro, N. H.
Dudley, A. M., Salem, Mass.
Dutton, L. B., Boston, "
Duncan, Geo. C., E. Jeffrey, N. H.
Durkee, T. G., Stoneham, Mass.
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Emerson, G. W., Manchester, N. H.
Emery, S. E., Newburyport, Mass.
†Edgerly, D. W., Farmington, N. H.
†Elliott, S. H., Haverhill, Mass.
*Farnham, J., Salem, "
Fanning, T. A., Hartford, Conn.
*Fairbanks, W. H., Boston, Mass.
Faxon, F. S., " "
†Fernald, H. C., " "
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Fenderson, L. B., S. Boston, Mass.
*Fisk, J. E., Salem, "
Fisk, J., Clinton, "
†Fisk, C. F., Milford, N. H.
Fillebrown, T., Portland, Me.
†Fletcher, J. M., Bradford, N. H.
Foltz, J. F., E. Boston, Mass.
French, C. S., Quincy, "
French, J. H., Fisherville, N. H.
†Flagg, H.
Gage, Fred F., Boston, Mass.
Gay, F. A., Providence, R. I.
Gerry, G. A., Lowell, Mass.
Gammon, N., Lynn, "
Garland, A., Farmington, N. H.
Gilson, A. H., Boston, Mass.
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†Gill, H. C., " "
Goddard, C. W., Boston, "
†Goddard, Isaac, Lewiston, Me.
†Graves, J. E., Boston, Mass.
Gray, C. H., Providence, R. I.
Green, G. E., So. Gardner, Mass.
Grover, J. M., Brookfield, "
Guttman, J., Great Falls, N. H.
†Hayes, W. W., Dover, "
*Hayes, E. D., Lawrence, Mass.
†Harriman, G. B., Boston, "
†Horn, S. F., " "
†Harwood, G. F., Worcester, "
†Harwood, C. H., Salem, "
†Haley, T., Biddeford, Me.
†Harrington, D. G., Boston, Mass.
Harris, E. N., " "
Hamilton, N. F., Richford, Vt.
†Haines, Geo. A., Dexter, Me.
Haynes, W. A., Boston, Mass.
*Heath, C., Manchester, N. H.
†Hemmingway, J., Athol, Mass.
†Hill, Hiram, Manchester, N. H.
†Hill, S. J., " "
Hill, Aaron, Melrose, Mass.
†Hinds, W. H. H., Ayer, "
Hichborn, H. G., Boston, "
Howland, A. W., Lawrence, "
Horne, R. F., Watertown, "
†Hodgedon, C. W., Boston, "
Hodge S. D., Burlington, Vt.
Howe, L. N., Boston, Mass.
Huckins, D. F., Watertown, "
Hussey, C. E., Biddeford, Me.
Hutchins, G. W., No. Anson, "
Hayward, C. H., Peterboro', N. H.
Ingalls, D. B., Clinton, Mass.
Jarvis, Wm., Claremont, N. H.
Jewett, E. M., Portsmouth, "
*Johnson, A. T., Lowell, Mass.
Johnson, C. B., Providence, R. I.
Johnson, H. E., No. Attleboro, Mass.
Johnson, W. F., E. Corinth, Me.
†Johnson, W. W., Boston, Mass.
†Johnson, W. P., Portland, Me.
*Kelley, W. P., Franklin, N. H.
Kershaw, C. A., Lawrence, Mass.
Kyes, F. W., Ipswich, "
†Kidder, J. H., Lawrence, "
Kinsman, E. O., Cambridge, "
Kirby, A. T., Providence, R. I.
Knight, J. K., Hyde Park, Mass.
†Lang, C. T., Woburn, "
†Lawrence, A., Lowell, Mass.

†Lawrence, S., Lowell, Mass.
†Lawrence, G. W., " "
Lamkin, W. M., Lynn, "
Leavitt, Henry, Skowhegan, Me.
†Leavitt, W. P., Boston, Mass.
*Little, J. W., Concord, N. H.
Libby, H. F., Boston, Mass.
Lewis, James, Burlington, Vt.
Lewis, A. N., " "
Lennon, J. F., Providence, R. I.
Locke, F. A., Boston, Mass.
Locke, L. F., Nashua, N. H.
Lull, A., " "
†Laskey, P. B., Marblehead, Mass.
†Mayo, U. K., Boston, "
†Magoon, C. H., Wakefield, "
Macdonald, W. L., Boston, "
MacDougal, S. J., " "
†Merrill, A. N., Thomaston, Me.
Merrill, W. W., Merrimack, Mass.
Merrill, B. P., Plymouth, N. H.
Mead, W. B., Providence, R. I.
McGovern, E. E., Vergennes, Vt.
McQuade, J. H., Medford, Mass.
Mitchell, T. M., Taunton, "
*Morgan, F. A., Gray, Me.
Milligan, W., Cambridgeport, Mass.
Mowe, A. M., Bradford, Vt.
*Murphy, C. M., Dover, N. H.
†Munsell, W. H., Wells River, Vt.
Newhall, A. T., Salem, "
†Newton, M., Boston, "
†Newton, R. H., Montpelier, Vt.
†Niles, E. S., Boston, Mass.
†Noyes, W. H., Newburyport, "
Norcross, C. H., Winchendon, "
O'Neil, Chas., Worcester, Mass.
Osgood, C. H., Boston, "
Olcott, B. T., Keene, N. H.
Page, E., Charlestown, Mass.
Page, W. E., Boston, "
Palmer, T., Fitchburg, "
Palmer, J. W., " "
Partridge, C. W., Lawrence, "
Parker, A. J., W. Gardner, "
†Parker, J. P., Bellows Falls, Vt.
Pearson, J. A., Barton, "
Peach, P. H., Salem, Mass.
Peabody, D. D., Stoneham, "
†Pelton, J. A., Middletown, Conn.
*Perkins, J. A., Amesbury, Mass.
†Perry, J. S., Portsmouth, N. H.
†Pevey, B. M., Worcester, Mass.
Perry, H. B., Pawtucket, R. I.
†Porter, D. T., Lawrence, Mass.
Porter, Warren, Salem, "
†Porter, S. N., Peterboro', N. H.
Porter, W. D., Providence, R. I.
†Powers, E. S., Brockton, Mass.

†Pierce, C. N., Portland Me.
†Pray, J. W., Rochester, N. H.
†Preble, M. B., Auburn, Me.
†Prescott, J. B., Manchester, N. H.
†Puffer, L. W., No. Bridgewater, Mass.
Quinn, J. E., Boston, "
Reed, G. S., " "
*Riggs, W. E., Lawrence, "
Rideout, Leon, Lynn, "
Ricker, G. R., Biddeford, Me.
*Robbins, R. L., Boston, Mass.
Roberts, A. D., Woonsocket, R. I.
Roberts, W. L., Weymouth, Mass.
†Russell, W. W., Exeter, N. H.
†Russ, A. A., Manchester, "
†Salmon, I. A., Boston, Mass.
Sanborn, L. W., Loudon, N. H.
Saville, A. F., Rockland, Mass.
Searle, F., Springfield, Mass.
*Severance, A., Salmon Falls, N. H.
†Severance, A. T., Newmarket, "
Shaw, S. J., Boston, Mass.
†Shumway, T. D., Plymouth, "
Shepard, L. D., Boston, "
Sharer, John, St. Albans, Vt.
*Shepard, James, Boston, Mass.
Shattuck, L. P., Providence, R. I.
Shattuck, W. H., Pawtucket, "
Slack, W. F., Lawrence, Mass.
Smith, Horace, Athol, "
Sibley, L. W., Rochester, N. H.
Spicer, A. H., Westerly, R. I.
*Spencer, H. C., Providence, "
Staples, H. G., Lyndon, Vt.
†Stevens, F. J., Haverhill, Mass.
Stevens, W. L., Somerville, "
Stevens, S. G., Boston, "
†Stone, H. N., Ayer, "
†Smith, A. J., Taunton, "
Stevens, W. B., Fall River, "
†Stiout, B. H., Boston, "
*Stevens, A. P., Portsmouth, N. H.
Swift, Geo. H., Manchester, Vt.
†Sylvester, C. W., Lawrence, Mass.
Swasey, O. F., Beverly, "
Tasker, C. W., Dover, N. H.
Tenney, A. W., Stoneham, Mass.
Thurber, G. J., Johnston, R. I.
Tellinghast, W. H., Providence, "
Towle, C. N., Concord, N. H.
Townsend, A. F., Worcester, Mass.
Tracy, E. S., St. Johnsbury, Vt.
Tracy, N. K., Charlestown, Mass.
Tuck, G. O., Gloucester, "
Twitchell, G. M., Fairfield, Me.
Upham, R. H., Boston, Mass.
†Vinal, G. A. W., Chelsea, "
*Vinal, W. D., Lowell, "
Walton, M. F., Boston, Mass.

†Walton, J. C.,	Fall River, Mass.	†White, E. Y.,	Cambridgeport, Mass.
Ward, S. L.,	Lowell, "	†Whitman, E. F.,	E. Bridgewater, "
Ward, W. G.,	" "	†Whitney, S. C.,	Warren, "
Waters, G. F.,	Boston, "	†Williams, J. L.,	Augusta, Me.
Warner, R. W.,	St. Johnsbury, Vt.	†Willard, M. T.,	Concord, N. H.
†Wells, J. B.,	Ipswich, Mass.	†Wood, E.,	E. Wilton, "
Wellington, S. L.,	Lancaster, N. H.	†Young, A. J.,	Dover, N. H.
†Wetherbee, I. J.,	Boston, Mass.	Young, G. A.,	Concord, "

*Dead. †Not members at this date.

Dr. Ingalls: Gentlemen, the paper is before you for discussion.

Dr. A. M. Dudley: I certainly have enjoyed the reading of the resumé or history of the society very much indeed. I have been back a good many more years than I had supposed I would be able to go in my memory, in connection with the society. I did not realize, when I heard the paper read, that it was over twenty years since I first became a member of this society, and eighteen years since I first became Secretary. As I have looked about in the hall, to discover the old members of the society, who were members when I joined, I have only seen four present, beside myself, who were members of this society twenty years ago, when I first joined it, so that nearly all of the membership of the society, at the present time, is composed of members who have joined within the last decade. I must say that of all of the societies with which I have been connected, I have derived more benefit from this one than any other during my practice. I have learned more that has been of real practical benefit to me, and that I have been able to make of practical benefit to my patients, than I could have learned in any other way.

I believe that any one who joins a society like this, desiring to learn everything that can be learned, will derive inestimable benefit from a meeting of this kind.

We gathered together men like Atkinson, Barker, McQuillen, Taft and others who came from all over the country, some of the best men of the profession, and they gave young men, and in fact any who were present, the benefit of their wise counsel and instruction.

There have been a great many connected with the society who have done a great deal for it, and no one who has been connected with it, since I have been a member, has been a more active member than the one who has just read a history of the society.

I am glad to recall the fact that it was my privilege, as Secretary of the society to go outside of the original geographical limits our

former name implied, and do what I could to induce members of our profession from all over New England to unite with us.

I am also glad to recall the fact that I was persistent, until it was finally accomplished, and the name changed from "Merrimack Valley" to "New England Society," and as a result, making it the largest in New England, and next to the largest in this country.

Dr. Cummings: I fully coincide with what Dr. Dudley has said this evening. I do not know of any member who has done more for the good of the society than the doctor himself. I think he has been a great blessing to the society, and certainly no one has done more for it than he has.

Dr. Geo. F. Waters: I am very glad to have heard what has been said tonight. I cannot call myself an original member, but I got in as early as I could, the first chance I got.

Dr. Stevens: I wish to say one word, to urge young men to join a society of this kind. It is the first society I ever belonged to, and it has been of more benefit, belonging to this society, than any I have belonged to since, and even than my college course. I cannot urge too strongly upon young men to join a society like this.

A Member: I move that the subject be passed, and that we take up the next paper. Carried.

Dr. Ingalls: The next paper on the programme is one by Dr. J. W. Clowes of New York city—Subject; "Demoralization of the Tooth-Brush, and Appropriate Means for the Care of the Teeth." Is Dr. Clowes present?

Dr. Dudley: I have received the following letter from Dr. Clowes:

667 Fifth Avenue, New York,
Oct. 3, 1887.

Dear Dr. Dudley—Your courteous invitation to the "Silver Wedding" of your society, my earnest desire and the hospitable request of a prominent denizen on Commonwealth Avenue to make his home my home during my stay in Boston, must all fail. I shall not be able to come. I trust, however, you will allow the text I gave you to retain its place on your programme, and that able men may take it up and do it justice.

I send you by mail an ideal tooth-brush to exhibit, to remember me by, and to bring with you some time to learn how I get the most good out of it. A right use of anything has so much to do with its efficiency. I consider this brush a simple and true type of goodness, and all variations from it, in shape, material and texture, impairments of its excellence. These have already occurred within

a few years, to an alarming extent, until confidence in the use of a tooth-brush has almost been lost.

I will give a few points on which I base my assertions, and hope sufficient sense and judgment may yet be left in the profession to stay the folly. One marauder, vandal, or what you will, shortens the bristles at either end of the brushing surface and make a useless incline; another chops up and mutilates to a saw teeth pattern; another creates the dromedary style with a hump on one end: another models after dilapidation and exhaustion, calls it the preventer, and hangs it up by a hole in the handle to dry; another, with method in his madness, elaborates a bristle tooth pick for the clearance of previously enlarged pockets between the teeth, and calls it "sense;" another, in obvious despair, at the wrecks and ruin scattered along the course of dental adventure with best intentions leaps to the rescue in "futile felt."

I enclose you this address, which I make to my patients, and as teeth brushing is an old story with me it may afford you some light on my method of procedure in more ways than one.

Hoping you will all have a very good time in your grand quarter centennial, with my kind regards to any enquiring friends, I remain,

Very truly yours,

J. W. CLOWES.

To Dr. A. M. Dudley,
Salem, Mass.

Dr. Dudley: The following is the address to patients spoken of in Dr. Clowes' letter:

DIRECTORY, EXPLANATORY AND VALEDICTORY.

When the teeth of a patient have been under professional treatment, to the extent of a thorough overhauling or placing in order, he is advised as follows, for his personal observance and benefit.

Saving a set of teeth is one of the most positive and undoubted processes in all the world, providing the dentist does his work well and the patient does likewise. This statement is made in all candor, that the patient may comprehend his position; for, if he would retain his teeth, he must "make an effort"—he must, indeed, be a co-worker. When both the dentist and patient are faithful, there can be no result but success. Therefore, oh, reader! peruse, ponder and practice these directions: In the morning before breakfast, always brush your teeth—first with water only, then with powder. Powder should be used at least once a day. Without powder teeth cannot be kept clean. Using a brush with tooth soap

just before retiring at night is a commendable practice. To brush effectually, place the upper and lower rows of teeth parallel to each other, the points of the fronts touching; then use your brush up and down the teeth between the gums, being not unmindful nor fearful to brush as well the gums as the teeth—thereby toughening the one and cleansing the other. Your back teeth need more brushing than your front ones. Wisdom in this respect will be displayed, should you show a partial care for the back and outsides of the rearmost teeth, above and below. After each meal use a quill tooth-pick, waxed silk floss, and rinse the mouth with moderately cold water. The intention of these is simply to remove food from among the teeth. Decomposed acidified food, animal or vegetable, is the worst enemy your teeth have now to encounter. The enemy, the combat and the prize are before you! Will you win or lose?

If I have learned how to place your teeth in their present condition of health, I have learned, also, how you may keep them so—as I, in my operations, have employed appropriate implements, so must you in yours.

These implements are always on hand for those who want them. I do not obtrude them upon any one; I merely state the fact that they are attainable. Employ other means—trust to other implements if you will—but in that case absolve me from all responsibility.

We are about to part. Come and see me at least once a year for inspection. This is important. Should you then exhibit evidences of having performed your part of the saving process, a mutual gladness will be ours—that we have not labored and suffered in vain.

Finally—be earnest. If I have been faithful, skillful, efficient, it is because I have been earnest. Earnest thought—earnest will—earnest action—never fail! They are the synonyms of success.

Dr. Ingalls: The paper is before you for discussion.

Dr. A. M. Dudley exhibited a tooth-brush, called "Dr. Lincoln's Electric Tooth Brush," which he obtained in England, and which was advertised as a "sure preventive against decay of the teeth, as well as the best brush in the market for cleansing the teeth." Dr. D. stated that the only peculiarity about it was the fact that the wires which held the bristles were connected with copper and zinc disks in the handle. He doubted whether, if this brush imparted electric shocks to the teeth in the process of brushing, it would prove at all beneficial, either in cleansing the teeth or preventing

decay. He also exhibited a tooth brush, such as he has advised his patients for several years to use, which is known as the "A" grooved brush. He had found it a more durable brush than any other, and well adapted for the ordinary purposes required of a tooth brush.

Dr. Geo. S. Waters exhibited several forms of tooth brushes, such as he has made for the use of his patients.

A MEMBER: I move that we pass the subject. Carried.

DR. INGALLS: The next subject on the programme is "Incidents of Office Practice."

A MEMBER: As it is very late, now after 10 o'clock, I will move you, sir, that we do now adjourn to meet at the Harvard Dental School on North Grove Street at 9 o'clock to-morrow morning. Carried.

SECOND DAY—MORNING SESSION.

Harvard Dental School, North Grove Street,
9 o'clock, A. M.

Several hundred members of the society and dentists of Boston and vicinity were in attendance at the Clinics.

Dr. H. A. Parr, of New York city, put a piece of bridge-work in the mouth of D. B. Ingalls of Clinton. Dr. Ingalls had lost the first superior left bicuspid—the canine and second bicuspid were standing. His method was as follows: He first ground the bicuspid down, so as to allow for the new gold tooth that he was to make, taking off all fullness on the sides, etc.

He used gauge 32 coin gold for the bands, and gauge 32 pure gold for the cusps and 18 K solder.

He made the piece and put it in in about three hours. The case was favorable and looked very natural and comfortable when completed. He described and explained his process as the operation advanced. He first made a band for the bicuspid of coin gold, cut it off the length he wanted it to occlude, then nicked the edges of the band with the shears and turned the edges in, then took a piece of pure gold and stamped two impressions into it with the

handle of an excavator to resemble cusps, this he soldered on the end of the band and finished up.

2nd. He now began on the cuspid and proceded the same as with the bicuspid, making a band to fit snugly at the neck of the tooth, then took a piece of pure gold and pressed it up inside the band and against the palatine portion of the cuspid, and took a burnisher and pressed it well against the tooth, then pressed soft wax up between the band and the pure gold, then with the band and the pure gold and wax in position he invested this in sand and plaster, burnt the wax out and filled the space with solder: then cut labial portion of the band off, leaving a narrow part at the margin, then shaped it upon a stone, taking off the superflous solder from the palatine surface. He then took a plain canine tooth and beveled the cutting edge from the inside outward and backed it up with gold, then took a piece of pure gold and indented it with the excavator to resemble cusps and waxed it on to the end of the plain cuspid, then waxed the tooth to the other two, cuspid and bicuspid, allowed the patient to close the mouth to see that the acclusion was right and then took a plaster cast of all in position and removed it, then invested it in sand and plaster and soldered all at once. When cool it was put in the mouth and fitted nicely.

Dr. Daniel B. Freeman, of Chicago, Ill., was to give a clinic on "Matrices," but being unable to be present he sent the following:

MATRICES.

By Dr. Dan'l B. Freeman, Chicago, Ill.

For a number of years, when I needed the help of a matrice, I have made them for each individual case at the moment of need, making them of brass and soft solder. Of course, these are only applicable where two teeth are nearly in contact.

Where I have an approximal cavity, and no tooth is near to hold such appliance in place, I use a narrow strip of soft brass, bent around the tooth to be operated on, then seize the two ends with serrated flat-nosed pliers, and draw closely around the tooth and slip over these two ends a steel key, which can be used indefinitely; now bend the ends of band over this key. Use new strips of brass or tin for each case; brass is preferable to get most perfect adaptation, but the tin has the advantage of reflection of light desirable in many cases.

If the tooth has a large crown and narrow neck, cut the strip on

a curve and apply short or inner curve next the gum. which will greatly facilitate impacting of gold in restoration of contour of molars and bicuspids.

Of late I do away with the soldered ones by making them in one piece. Take a piece of soft brass or tin 30 or 32 gauge, double it and with plate shears or scissors cut in this form leaving the top united.

I use such, quite narrow, oftentimes to start first half or two-thirds of filling, then remove to complete it. If it is a V shaped space widest at gingival border, I open the two lips and burnish edges and points to the wall and tooth contour on each side, and insert a triangular or V shaped wedge which holds it firmly in place.

This, I claim, is the only device for the purpose so flexible as to most perfectly adapt itself to all cases.

Nearly all loop matrices are too rigid, and only suited to one class of cases, *i. e.*, of uniform size from crown to neck.

I have shown this plan to many the past year, and Dr. Weeks of Minneapolis, showed cuts of it at the Medical Congress so that if there are any original ideas of mine or merit in the method, it is public property.

DANIEL B. FREEMAN.

Dr. C. C. Carroll of Meadville, Penn., gave a clinical lecture on "Cast Aluminum," as follows:

ALUMINUM CAST DENTURES.

By Dr. C. C. Carroll of Meadville, Pa.

Aluminum has long been regarded as possessing many properties peculiarly fitting it as a base for dental plates, such as lightness, stiffness, conductivity and strength; yet it has certain peculiarities differing from other metals that have precluded its general use in the mechanic arts, and especially in dentistry until quite recently. Two objections to its use as a swaged plate have existed. First, our inability to solder it; and second, when swaged dentures with rubber attachments have been made it has been found in many cases to disintegrate or become porous by the action of the fluids of the mouth. As the result of a long conducted series of experiments, it has been discovered that the disintegration is caused by iron and other impurities found in the aluminum of commerce, which is used for swaged plates. Efforts have been made during the past

quarter of a century to cast it into dentures, but its low specific gravity of only two and five-tenths, and its great contraction of a line to the inch in cooling, were the difficulties in the way of a cast denture. All these difficulties are now overcome in our prepared aluminum, which is first made chemically pure to prevent disintegration, then alloyed with a small per cent. of noble metals that expand in cooling and thus compensate the contraction of the aluminum, reducing the contraction to the one-tenth part of a line or the one one hundred and twentieth part of an inch, practically nil, enabling us to cast directly upon the teeth, without a fracture. The difficulty of making a sharp cast of aluminum by virtue of its low specific gravity is overcome by the use of our pneumatic crucible, which enables us to force the molten aluminum into every part of the matrix producing a perfect cast of the model.

We take an impression for this aluminum cast work as we would for any other work; then from this impression make a model of plaster-of-Paris, three parts, and of fine sand or marble dust, one part. Now we proceed very much as in rubber work. For temporary base plates we take common paraffine wax and roll it down to about twenty-three standard gold plate gauge.

There are various forms of mounting the common rubber teeth which we use in this aluminum cast work. The simplest of which is to cast a base plate with a flange or undercut for the purpose of attaching the teeth by pink rubber or celluloid. Upon this cast base plate we place wax and get the bite, which we place upon the articulator and mount in the usual manner for rubber work. Then attach our teeth to this aluminum base plate, making an artificial gum of pink rubber or celluloid.

Another form of mounting is to place plain teeth directly upon the temporary wax base plate, the same as in mounting for rubber work, with the exception that you space your teeth slightly to allow for this slight contraction. Along the alveolar border we make an undercut in the wax base plate which undercut is reproduced in the aluminum plate permanently when cast, for the attachment of a gum colored facing of pink rubber or celluloid. We now invest the teeth upon the model in the two-part perforated iron flask very much after the manner of investing for rubber work. Cut gates from the center part of the base plate to the pouring point of the flask, also pockets from the heel of the base plate into which the air is forced through the matrix in the act of casting. The wax base plate is removed by washing out with hot water, and the flask

placed in the upper chamber of the automatic gas (or gasoline) furnace to be dried out preparatory to casting. You will observe that by this method of mounting we intend to cast the aluminum directly upon the teeth, attaching them firmly to the plate.

Gum section teeth can be used as well as plain teeth by exercising care in the method of mounting, taking the precaution of placing a thin slip of paper between the joints before investing.

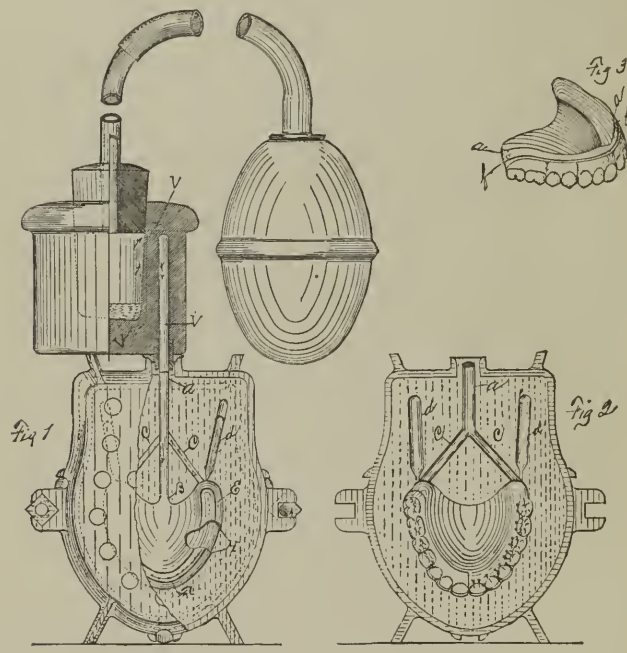


Fig. I.

Fig. No. 1 shows the temporary base plate on the model, and invested in the flask with a section of flash and investing material cut away; *a b* is the middle gate; *c c*, gates from the heel to the middle gate; *d d*, perpendicular gate; *e f*, the flange on base plate; *h*, base plate cut through to show position on the model; *v v*, direction of metal in casting.

Fig. No. 2 shows a denture mounted and invested in female part of flask for Base No. 2, one-half, with the wax removed, or for Base No. 1, when to be cast directly on the teeth.

Fig. No. 3, *f f* represents the line of the flange after attachment with rubber or celluloid; *a a*, alveolar edge of plate.

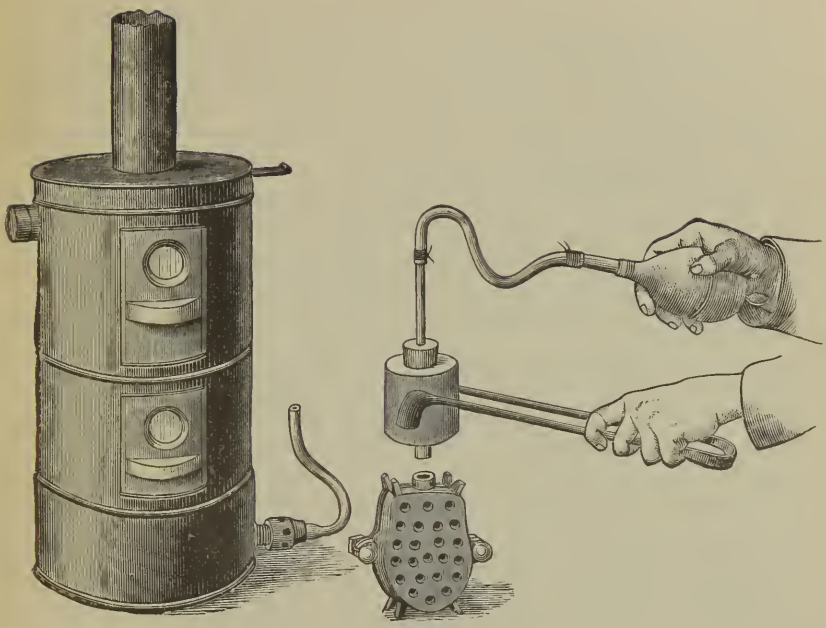


Fig. II.

When the matrix is dry, which will be shown if no moisture appears upon a mouth mirror held over the pouring point, we make the cast by use of an automatic crucible, which is placed in the lower chamber of our furnace and contains the aluminum to be used in casting. The crucible is placed upon the flask, connecting the nipple of the pneumatic crucible with the pouring point of the flask, and by means of a rubber bulb the aluminum is forced into the matrix, making a very sharp and well defined cast which is a perfect counterpart of the model, Fig. II. As soon as the piece has cooled, the flask is opened and the denture removed. The piece is then finished up by means of sand paper and pumice stone, using fine crocus for a finer polish. It takes and retains the appearance of the finest polished nickel plate.

All forms of dentures are readily made by means of this aluminum cast work, including crowns, bridges, as well as partial and complete dentures. This system of aluminum cast work is entirely new, simple and complete, and promises to revolutionize the present method of prosthetic dentistry.

While aluminum, by virtue of its extreme lightness, having a

specific gravity of 2.5, is peculiarly fitted for upper dentures, it is better to have a heavier metal for lower dentures. For this purpose we make an alloy containing a specific gravity of 7.5. This alloy, Base No. 2, is the solder for Base No. 1, and is used for lower dentures partial or complete. By means of Base No. 2 a piece may be readily soldered and mended.

These aluminum outfits are placed before the profession upon their merits, without any royalty or license being charged for the use of the patents by which they are covered.

At the close of the lecture, Dr. Carroll cast a full aluminum denture directly upon plain teeth.

Dr. D. Genese of Baltimore, Md. was to have given a demonstration of the "Use of New Pinless Artificial Teeth," but being unable to be present he sent on some specimens of his teeth, vulcanized on to rubber, gum sections and plain. His letter is as follows:

"These specimens have been ground to fit models such as would be found in practice, and subjected to the heaviest pressure in the flask, with an excess of rubber screwed up cold, and which no pin tooth would stand without breaking.

Note the tenacity with which the edges hold to the porcelain, and which cannot be pulled apart with any ordinary force.

In the single tooth note the same strong hold the rubber has on the base, the weakest part in a pin tooth when set in the gum."

Dr. J. E. Waitt, demonstrator in charge of the mechanical department of the Harvard Dental School, had a very complete working set of models in mechanical dentistry, from the impression material to the finished work—viz.: cup and impression wax; impression in plaster, and also one in modeling compound. Models: trial plates, and bites for single and double sets; cases mounted on articulators, showing the teeth set up and waxed on one half of one side and the bite on the other; cases entirely waxed up and tinned: also, cases flasked, flasks opened and wax boiled out, ready for packing: flasks packed, and then the finished case.

These processes were also represented for Celluloid, showing the cases tinned and set up on tin models: also the hard metal palate to prevent the moving of the teeth in pressing, and also the thickening of the Celluloid in the palate: this process complete to the finished work: Also metal cases, and Allen continuous gum work.

Dr. Waitt also showed samples of teeth and crowns adapted to nearly all circumstances in Mechanical Dentistry.

Dr. Waitt will present all of these models, &c., to the Museum of the Harvard Dental school, where they may be seen at any time.

Dr. J. Gardner Morey of New York, gave a clinical lecture as follows:

HOLLOW POST-TOOTH CROWNS.

We will now take up the hollow post-tooth crown, which for strength, close adaptation, rapidity of construction and ease of adjustment, knocks the "tar" out of all other crowns up to this time. If any of you have had occasion to remove a solid pin from a root, I dare say that one is sufficient for all time. If the porcelain front is broken, you tap the gold cap on the palatine surface, drill through to hole in post, separate cap from post, and remove it, then you can drill out the post in three minutes. Place the cap on root, insert new post, stick to cap with wax, remove and solder. (Post should always be filled with whiting or some other material to keep the solder from flowing in.)

Now you have cap and post same as in a new case. Grind tooth, (I always use English teeth, because you can grind and polish the face to any shape): back with crown metal, pure gold and platina, 30 gauge; don't forget to put paper between backing and tooth, to prevent checking; stick with wax to cap, remove and solder, file up and polish, and set same as in a new case.

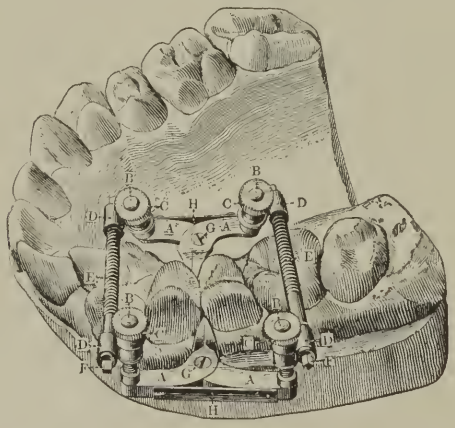
The drills 5 a, 6 a, 7 a, called crown trueing drills, are made especially for trueing the canal for the post which fits exactly, and only requires to seal the joint to keep it from the infiltration of liquids.

What do I use to seal the joint? Well, sometimes oxy-phosphate, but I am using largely gutta percha and Canada Balsam. The cap being burnished around the neck of the root, and being square upon it, in combination with hollow post bearing upon solid tooth its whole length, forms a most rigid and solid structure.

I suppose you would like to see me make a cap. First, trim down root square on face, then bevel the frontal portion up under the gum, so that it will cover the tooth when placed in position. There are two ways. I take the impression of the root, one with hard white wax and run plaster on it for die; the other is with impression cup, made like a band and handle that is adjustable to the root, to take the different sizes. As the former is described in the circular, I will show the other to you. Rub the end of root with

soapstone; place band impression cup on root; screw the handle up until the band is tight; put a piece of compound in cup, and press against root; now remove, place in the old impression cup, filling around with compound; slip on perforated tube, put funnel in tube, press down on compound, and see that there is no leakage for the metal to run out; melt and pour fusible metal; remove cold; trim die as you wish. Take flat piece of lead; lay on piece of crown metal, 30 gauge, strike light blow sufficient to give outline of die, trim the depth you wish to turn up the edge. With these hollow pliers turn up the edge, following line of the die upon the metal; in two minutes you can turn up the edge; place on die and burnish tight; trim cap the shape you wish; place cap on root, drill hole through the depression in cap, take trueing drill size of pin you are going to use, and true out cap and root: place in pin stick with wax and solder. You now proceed as I have already shown you. Under no consideration, in soldering, allow any solder to flow on the edge going round the root, as it makes it too stiff to burnish. When the crown is polished ready for setting, wipe out canal with thin oxy-phosphate or gutta percha and Canada balsam, and push tooth to place; hold and burnish tight around root, and you are finished, and so am I.

ADJUSTABLE COMPOUND LEVER SEPARATOR.



We will now take up the separator. When I say the separator, I mean what I say. It is a new departure. The wedge is abandoned, the jackscrews are thrown aside. In their place we

substitute a compound lever, operated with screws, running transversely to the levers across the teeth, giving a lateral motion to the points of the levers and forcing the teeth apart. Now, if you look at the drawing you will see at a glance the simplicity of the device. The separator is placed on the teeth, as in the drawing, and the nuts CC CC adjusted to bring the screw bars E E in contact with the crowns of the teeth to prevent the points of the levers AA AA from impinging upon the gum. When you have adjusted it, take the little watch key (you can wind your watch or turn the screw of the separator with equal ease), place it upon the squared ends of the screw bars, E E, at the points F F, and turn until the screws become tight. If the cavity to be filled is on the anterior approximal surface of the second bicuspid, you tighten the screw bar E that crosses cuspid, to bring the screw post B and end of lever A close to the teeth, and out of the line of the operating instrument, not necessitating the removal of the separator to file the cavity. If you wish to file the posterior approximal cavity of the first bicuspid turn the opposite screw bar, or vice versa. You will notice that the point of one of the levers AA, is forced against the side of the tooth as you tighten one of the screw bars E, making a fulcrum of the other point, the reverse takes place, if you screw up the other bar, a simple method of illustrating is, you have two large boulders side by side; you wish to pry them apart; place a crowbar in between and stand on one side, another person upon the opposite, places another bar in; now where the two bars cross each other, drill a hole and put in a pin. You thus construct a compound lever having double the force, also doing away with the friction of the wedge. Wedge separators are very injurious to the enamel, and cannot be used upon soft structures without crushing them and giving caries a greater opportunity to carry on its deadly work. Separators are a great boon to the patient, as well as the dentist, but like everything else, must be used with good judgment. I have separated teeth in three minutes without giving any more trouble than an uncomfortable tightness to the teeth. The reason is plain enough. The swivel joint movement allows the separator to adjust itself; other ones are arbitrary, and the teeth must adjust themselves to it. Up to this time there has been no separators deviating from the principle of the Jarvis, although some improvements in the forms; but in this one we have the power applied at right angles to the object to be moved. The swivel movement gives a variety of adjustments. You can have the points exactly opposite, or by screwing the nuts on the posts throw

them one above the other. In case the cavity is close to the margin of the gum you can throw the points above, while those on the opposite side will not impinge upon the gums. You can also separate the two outside teeth, leaving the centre one standing by placing the points on the palatine side between the two bicuspids: while those on the buccal may be placed either between the canine and bicuspid or molar and bicuspid, making the centre tooth a fulcrum. Of course, this can only be done when the teeth are not crowded. It can be adjusted to fit any case, no matter how irregular the teeth may be. I claim for this separator the following points:

1st. That it is strictly universal and can be adjusted to any case.

2d. It does not wedge and crush the thin walls.

3d. It is not in the way and can be left on while operating.

4th. It is adjustable and does not require wedging up to keep it from impinging on the gums.

5th. It is not arbitrary but conforms itself to the teeth.

6th. It has four times the power and no friction.

7th. It will make two separations with one adjustment.

8th. It does not give one-twentieth part of the pain.

9th. It does not slip off the teeth while operating.

10th. It can be adjusted in one-tenth part of the time.

11th. The key is used on the outside of the mouth with greater ease and ten times the rapidity.

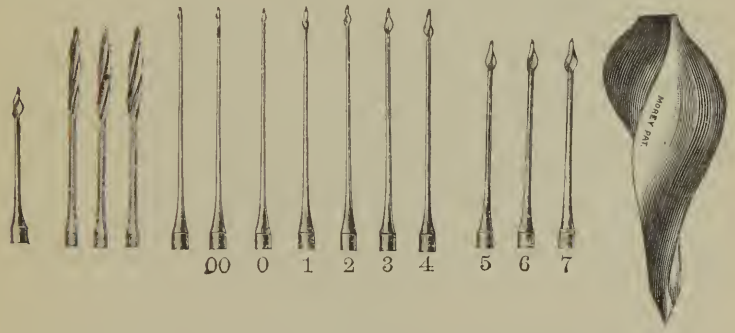
12th. It is worth more than all other separators put together and no dentist should be without one.

Gentlemen, I must thank you for the close attention you have given me.

NERVE DRILLS.

The preparation of roots for filling has heretofore been attended with more or less trouble and vexation of spirit. But the time has come when we can be sure that we get to the end of the root with safety. We need not wait for sterilizers to do their work. With the Morey drill you can accomplish it in a few minutes time. It is useless for you to say that roots cannot be drilled with safety. I am right here to show you that they can, if you will follow my instructions to the letter. I ought to say right here something about drills of the past. I will make but a brief mention as it is not chestnuts that you are after, but something new. The first drill was brought out by Dr. Gates of Philadelphia, in 1866, but it cut upon the point and had thick lips and was used by the hand. In 1876, Dr. Glidden put a point on, and it was called the

Gates-Glidden. They were never made for the engine. I produced the first spiral-fluted, non-cutting point drill for the engine, and all those sold as improved Gates-Glidden drills are abortions and infringements upon my drill. Now, gentlemen, in my circular you will find a full description of the advantages of my drill, so I will dwell no further upon its merits, but give you an actual demonstration of its working. Out of this catacomb of bones we will select one of the most tortuous of canals to be drilled. Now, as you see, it is very much curved and looks dangerous. But we will get there all the same. I first use No. 5 drill to open the canal to give it



circular shape, (the reason is that No. 5 is the smallest of the four-sided drills, those from No. 00 to 4, being three sided, would be apt to catch in the fisure and twist off the head if used first.) Now, I choose one of the flexible three sided drills, the size of the opening in canal; I run the engine rapidly, using little or no pressure; the construction of the drill being self-feeding. As soon as it fails to cut change to size smaller, and so on until the smallest size is used or the end is reached, taking the precaution to remove the drill frequently to draw out the cuttings. The motion is a longitudinal spiral, shaving the tubuli. No drill should be used which does not have the longitudinal spiral cut; all other forms crush the structure. Fill the openings of the tubuli with septic tooth matter, which prevents the absorption of antiseptic medicines. Having reached the apex I split the root. Now, take this magnifying glass and examine the satin-like surface of the canal, after drilling. The canal is left a V shape at the apex. Whatever you seal the opening with converges to a common centre, and does not push through the foramen. I will now show you how to drill out a canal, entering an approximal cavity. Take No. 5 drill, enter until the point strikes the side wall of the canal, then pull back, running the engine all the while; pen-

etrate again and draw out; continue to do so, and you will find that the drill cuts only on one side. The non-cutting point slides down against the side wall of the canal, and when you draw back takes a portion off. By this means the opening takes a curvelinear shape. When you penetrate deep enough to get on a line with the canal, change for a flexible drill, say No. 2, or perhaps 1, as the case may be, and finish as in ordinary drilling. As I hear the stentorian yet musical voice of Dr. Dudley, master of ceremonies, I shall have to close with one word more. Go thou and do likewise, and be hereafter ever happy.

Dr. H. A. Baker of Boston, exhibited an application of a bicycle seat to a swinging stool to be used as an operating chair.

Dr. A. H. Gilson of Boston, had on exhibition, and presented to each member of the assembly rubber and cloth disks for the dental engine, for carrying pumice and other powders, to clean teeth or polish fillings.

He also had on exhibition his closed "dressing forceps," a forcep or tweezer which is always closed, on pressing a spring on the top, the jaws or points open, and hold the cotton or anything that is placed there.

SECOND DAY—AFTERNOON SESSION.

Union Hall, Boylston Street,
2.45 o'clock, P. M.

Dr. C. A. Brackett, First Vice President, in the chair.

Miscellaneous business is in order.

Dr. Dudley, Chairman Executive Committee: I have three names presented to me for admission to this society; they have been acted upon favorably by the executive committee, and I move that the secretary cast a ballott as before: W. H. Pomeroy, Gloucester, Mass., junior member, O. F. Harris, Worcester, Mass., junior member, Jesse Porter, Chicopee, Mass., junior member, (all elected).

Dr. T. W. Clements: The committee appointed at the meeting of this society, in October 1885, to investigate charges

brought against Dr. W. H. Tillinghast of Providence, R. I., beg leave to report.

We find among the papers pertaining to this case, the resignation of Dr. Tillinghast, dated January 21st, 1885. We find on examination of the treasurers books, that Dr. Tillinghast had paid his dues to October, 1885. Therefore, any action on the part of your committee is forestalled by the said resignation.

Respectfully submitted,

T. W. CLEMENTS,
D. B INGALLS,
E. O. KINSMAN.

A MEMBER: I move you that the report be accepted and placed on file. Carried.

DR. DUDLEY: I move you that the secretary and treasurer be instructed to drop Dr. W. H. Tillinghast's name from the books of the society at the date when his resignation was received. Carried.

DR. BRACKETT: Will Dr. Clement, the second vice president please take the chair.

DR. CLEMENT: The next paper that you will have the pleasure of listening to is, one by Dr. C. A. Brackett of Newport, R. I. "The Relations of Medicine and Dentistry."

"THE RELATIONS OF MEDICINE AND DENTISTRY."

By C. A. Brackett, D. M. D., Newport, R. I.

Mr. President and Gentlemen: Some of the ideas in this paper were conceived quite a long time ago. In view of the occasional references which are made to error of diagnosis and treatment of dental diseases by physicians; and the original design was to show something of the other side of the case. Several circumstances have arisen to considerably modify the first intention and the general character of the paper. The title, however, need not be changed. One of these circumstances was the remarkable paper read before this society, a year ago, by our esteemed friend from New York, and other circumstances have followed in succession from that. The author of the paper, to which allusion is made, is, as we all well know, a man of the highest accomplishments in everything which pertains to the theory and practice of dentistry, and a great deal beside. He is a man of clear, sharp, original thought; he is a rare master of elegant and forceful expression; he is an orator. When he speaks, if we are not fully convinced, we are impressed; and if we do not assent we have to cast well about us to say why we do not assent. But after the lapse of a year, with

various events which it has brought, it would be manifestly unfair to enter into an argumentation which should oppose the hindsight of all of us against the foresight of the essayist. Very many of Dr. Kingsley's propositions have been strongly reflected in the eloquent paper of Dr. Morrison, before the Second District Society of the state of New York, in January. Others have been disproved by the logic of events. In the light of certain developments, Dr. Kingsley himself has graciously admitted that his opponents in the discussion are measurably in the right; so that, I think, we are justified in saying that the paper, "Dentistry Not a Specialty in Medicine," read before this and other societies last autumn, is a lawyer's presentation of one side of the case. It is a strong presentation; it is a suggestive presentation: it has set us all thinking; we are all the better for it, and the paper will long remain one of the most noteworthy to which the society has ever listened.

After all, there is not nearly so much difference of opinion on the question whether dentistry is or is not a specialty of medicine, as would appear from the utterances of these prominent men. It is very largely a matter of definition. In my school days I had repeated long and heated discussions with a fellow student on the question whether sound could exist in a region where there were no ears to hear it. He said no; I said yes. We never agreed, for the reason, as I have since seen, that our conceptions of the meaning of the word sound, were quite unlike. By sound, I understood the the impulse or vibration itself; he understood, more scientifically and correctly, the effect of the impingement of the vibration upon a present percipient ear.

And, so, in regard to this other question, there is really no difference between us. If we will only stop saying dentistry is a specialty of medicine, and dentistry is not a specialty of medicine, and say that medicine and dentistry are intimately related to each other, we are all agreed, every one in perfect accord.

Well, then, as the relationship exists, let us see what are some of the points in the relationship, how they came about, and whom they benefit.

If we were to go back to an imaginary beginning of medicine, I suppose we should find it then, as now, largely a matter of theory and drugs—in the beginning very different theories and very different drugs from those most held in respect to-day. In the passing of the centuries the basal principles of therapeutics and the contents of the materia medica have undergone many most astonishing changes

at different times; but in all times the theories and the drugs have been there. The construction of theories and the adaptation of remedies required study. Through study came attainment, the more study the more and better the attainment Attainment conferred superiority and power, and through the progressive establishment of truth, and the successive elimination of error there has grown up the learned and noble profession of general medicine, as we are blessed with it to-day.

I apprehend that in the developement of all surgery, including dental surgery, there has been a different order of things. It didn't require a very brilliant intellect to see that bleeding should be stopped, that foreign substances should be removed, that torn and cut tissues should be coaptated, the denuded surfaces should be protected, that abcesses should be opened, that crushed gangrenous and necrotic membranes, should be lopped off. In the beginning surgery didn't seem to require much protracted study or elaborate theorizing. The operator got at his work mechanically, and did what common sense would point out to any one to do. We cannot undertake to decide which is the older, medicine or surgery; but I think we can understand something of how it came about at one time in the world's history, that the claims and consideration of medicine and its practitioners were very much greater than those allowed or demanded by surgery, and those who practiced surgery. Such mechanical pursuits were beneath the dignity of educated, philosophical men, and they were relegated to the barbers and blacksmiths.

Of course after this order of things had prevailed for a time, it began to be seen that even in surgery, brains, education, knowledge, theory and capacity, counted for something, and the more enlightened the barbers and blacksmiths—the surgeons—became, the more they attained, the more they all counted.

After a great practical discovery has been made, we often marvel that it had not been thought of before, and when the convenience which it confers is realized we wonder how the world ever got along without it. Very many of the great discoveries of the world have been made within the last century, multitudes of them within the last score of years. It is not then so strange that the world failed to see until within comparatively very recent times, that all organs and tissues of the human body are subject to certain general laws of developement, of constituent elements, of structure, of function, of interdependence, of health, of susceptibility to disease, of amenability to treatment. The medical and the surgical, and the dental

world, now see it. They did not see it so well twenty years ago; they did not see it so well one year ago as they do to-day; and they do not see it to-day nearly so well as they will a score of years hence.

This that we have just been saying is substantially the same as saying that all branches of the healing art need to be well grounded in the same foundation principles. Their practitioners all need to know normal structure; they need to know natural function; they need know abnormal structure and perverted function; they need to know the principles of the combination and disruption of the chemical elements; they need to know the means and methods of combatting disease; they need to know the limitations of operative interference. In other words, they need to know anatomy, histology, physiology, pathology, chemistry, the matira medica, the principles of medicine, the principles of surgery, each of them in a general way and all in a special way, so far as they relate to the particular organs, tissues, functions and lesions with which any individual practitioner has most to do. Dentistry is a branch of the healing art, and Dr. Kingsley well says that in its daily practice can be found anatomists, physiologists, pathologists, histologists, biologists, microscopists, chemists, botanists, geologists and metallurgists. All these in addition to deft manipulators, skilled operators, artisans of many kinds, workers in divers materials. That some of us are not perfect in all of these things does not detract from the general fact that it is desirable for all of us to have as high attainments in all of them as possible. If this were not so why should such men as Miller and Black, and Andrews, pursue for long years laborious researches in some of the most difficult, abstruse and advanced fields of modern investigation? They are scientists of the first rank; they are entitled in their fields to the highest honor, and we are proud to say that they are for this none the less, but all the more dentists. Their different labors are in their nature not incongruous, but mutually helpful. Thereby they are themselves greatly benefitted, and the profession and the world are immeasurably blessed.

A prominent point in the relationship of medicine and dentistry is the helpful, educational, developemental influence which the former has had upon the latter. If primitive dentistry began, as we believe, largely in crude mechanical efforts, the difference between those comparatively unintelligent efforts and the most skilled operations of to-day is due, in part, not wholly, but in part, to increased knowledge of such foundation principles as we have just been talking about, which knowledge was originally largely gained, and in

many instances directly communicated by members of the medical profession. The reasons why dentistry is to be accounted a calling learnedly professional in character have been well stated. In its pursuit in addition to various subjects which have been mentioned, one needs to know individual characteristics, idiosyncrasies, resistive capacity, recuperative ability. The personal equation should be calculated many nice points weighed, intelligent judgement exercised. All of this is after the manner of medicine.

Dentistry owes to medicine much for the capable filling of important chairs in nearly or quite all the dental schools of the world. Particularly in the past, when dentists have failed in the more delicate conservative operations which they have attempted, it has often been largely due to ignorance of certain principles, which might have been learned from medical science. The mechanic naturally gets at things mechanically; and in nearly all dentistry the mechanics are a most important, essential and indispensible part of the whole.

But, starting from a mechanical standpoint, the dentist is likely to learn pathology not at all, and therapeuties empirically. This is beginning at the wrong end of things: commencing the structure at the top, endeavoring to apply the particular without having mastered the general.

Without attempt to rehearse more now of what dentistry owes to medicine, let us quickly pass on to suggest that medicine owes dentistry very much. Whatever the developments of the future may be, there will always stand out prominently and most honorably the part which dentists, New England dentists, had in the discovery and introduction of those greatest boons and blessings to suffering humanity, anæsthetics. The credit due, and given, Wells and Riggs will grow none the less as passing centuries shall make the world's judgement more impartial. Without the degree of any professional schools they were great physicians, the peers of any man.

Medicine owes dentistry much for multitudinous researches and attainments in special fields, and it has never been slow to acknowledge the debt. The field of medicine is so immense in its minutiæ, so constantly extending and developing, that no individual can profitably attempt to compass and keep pace with it all. No man recognizes this more fully than the general practitioner. In his own case, and for his patients of these lesions of special organs no one is more ready to consult the specialist, and no one is more appreciative: of the advantage thereby gained, whether that specialist be the

oculist, the aurist, the gynecologist, the laryngologist, the general surgeon or the dentist. Who is there among us who, according to the measure of his ability, is not frequently called in consultation with physicians and surgeons of the highest attainments, and who of us under such circumstances has failed to be treated with all respect, and our opinions, so far as our province was concerned, given not only due consideration but implicitly accepted and acted on without even thought of questioning? All we need to think of is our worthiness and capacity. We needn't be troubled about our recognition, our standing, or our dignity. All of those things may be left to take care of themselves; and they will do it just as surely as a man's reputation will be all right if his character is all right. In witness of this, see! In the light of recent events we need not longer discuss theoretically whether dentistry is a branch of the healing art, a part of medicine. It is already so declared by the highest authority; and every man who comes up to the simple standard fixed is recognized as a brother and taken into full fellowship, without any discrimination or restriction whatever.

At a meeting of the American Medical Association, held on the 10th of last June, there was presented by Dr. N. S. Davis of Chicago, the honored President of the Ninth International Medical Congress, this resolution:

"Resolved, That the regular graduates of such dental and oral schools and colleges, as require of their students a standard of preliminary or general education, and a term of professional study equal to the best class of the medical colleges of this country, and embrace in their curriculum all the fundamental branches of medicine, differing chiefly by substituting practical and clinical instruction in dental and oral medicine and surgery, in place of practical and clinical instruction in general medicine and surgery, be recognized as members of the regular profession of medicine, and eligible to membership in this association on the same conditions and subject to the same regulations as other members."

This resolution was passed unanimously; there was not a dissenting voice, and both its letter and its spirit were cordially endorsed in the International Congress at Washington. Many of us have had practical evidence of a similar spirit in local medical societies.

It is my impression that principally on account of the comparative inaccessibility of Copenhagen, dentists did not to any extent seek representation in the Eighth International Medical Congress; but in the Seventh, at London 1881, and in the Ninth at Washington, in 1887, they formed one of the largest and most important sections,

and their papers and discussions while inevitably including some matter of little value were well worthy to be placed and published side by side with those of the other sections.

The total registration of the Washington Congress was 2,755. For work, this body of men was divided into eighteen sections. The dental section, being one of so many, had nearly five hundred members, and a large proportion of them were there to work and to learn. It is safe to say that none of them felt that they were out of place there, that they had no business there, or that they were not at home.

At this point I cannot do better than quote a paragraph from Dr. Barretts editorial estimation of the dental section of the Congress, as published in the October Independent Practitioner. "There is no doubt that the influence of the meeting will be powerful for good. The general tone was excellent, and we do not believe that one person attended it, who did not come away with an increased respect for his profession and a firm determination to labor for its advancement. Perfection was not to be expected, and while an honest sense of duty compels criticism upon some points, a sincere exultation in what of good was accomplished will always enable every member to recollect with pride that he, too, was a member of the Ninth International Congress. But the results obtained were not secured without great labor, and Dr. Taft and the Secretaries, with many of the Vice-Presidents and members of the Council, whom to name would be invidious, deserve the thanks of all dentists for their unwearied efforts to promote the interests of the Congress and the section. It is not probable that in America the intimate relation existing between dentistry and medicine will ever again be disputed, nor will regular graduates in dentistry, ever again be excluded from any important medical meeting, and this result will repay all the toil and expense attendant upon the late memorable meeting."

All this illustrates most forcibly the wisdom of the old doctrine —"Sow thy seed, thou knowest not whether it shall prosper." Do thy part faithfully, and a higher power will take care of the consequences. Be not discouraged on account of influences apparently antagonistic. They may be the very things under Providence designed to work out a greater success, a more exceeding weight of glory. Indeed, in this case, we may question whether the paper to which allusion has been made, and which attracted so much attention a year ago, has not been as influential as any other one cause in bringing about the happy condition of things which exists to-day. If medicine and dentistry are different, the difference is such as is ex-

pressed in the familiar quotation, "Distinct as the billows, yet one as the sea."

The great practical lesson of all this is that we strive to walk worthy of the vocation wherewith we are called. Being met more than half way, being given recognition above our deserts, it behooves us to be not puffed up or presuming, but modest, and earnestly seeking how we may make ourselves more worthy of the confidence placed in us, and more capable of bearing the responsibilities rested upon us. In the effort to do this we may get inspiration from the spirit of another quotation which we may modify very slightly and say that we should "Look out as well as in;" "Look forward, and not back;" "Look up and not down," and in that spirit of mutual helpfulness which has been so supremely influential in making us what we are, "Lend a hand."

Dr. Brackett, in the chair: The next paper is one by Dr. G. W. Weld of New York. Subject: "The Effect of Acid Medicines upon the Teeth.".

Dr. Dudley: I have received a letter from the medical adviser of Dr. Weld, which states that Dr. Weld is confined to his room, and will therefore be unable to be with us and read his paper. Dr. Weld promises, however, to do something for us at some future time.

As a substitute for the paper, I would like to speak about a case of fracture of the jaw.

The subject, "Treatment of Fractures of the Maxillæ" was taken up, and Dr. Dudley opened the discussion by citing the case of a farm hand who, while running in the yard, ran against a clothes line, with his mouth wide open, the line catching between some of the teeth of his upper jaw, wrenched three teeth out and produced a compound fracture of the superior maxilla. After a week's unsuccessful treatment by a country physician, Dr. Dudley was called to the case, and he found the fracture had not been properly treated, and there was a great amount of inflammation and supperation. With great difficulty the fractured parts were restored to their normal position, and an impression obtained from which casts were made and an interdental splint formed. This was worn for three weeks. The peculiarity of this splint was that it had to be constructed with gold horns extending out at each corner of the mouth and the whole held in place by the aid of the skull cap bandage. At the end of the three weeks a portion of the splint was cut away and the remaining teeth in the upper jaw removed, they being too poor to retain. At the end of six weeks the

splint was removed and an impression taken, and an entire superior denture made for the patient, which he was wearing with entire comfort. The patient said that he had been struck by lightning and had an arm and a leg broken, but the broken jaw was the worst accident that had ever befallen him.

A second case cited by Dr. Dudley was that of a young man who, under the influence of liquor, while in a controversy with another young man, was twice knocked down. A day or two later, suffering with a swollen face and two or three loose teeth, he applied to a young, non-graduate dentist for relief. The dentist "relieved" him of his left inferior cuspid, a perfectly sound tooth, simply because it was loose. Several days more elapsed, and the soreness still continuing he returned to the same dentist, and the suggestion was made that if the bicuspids, which were also loose, were removed, the trouble would cease. To this the patient demurred, and consulted a homeopathic physician, who had just begun practice. This physician discovered that the inferior maxilla had been fractured, and endeavored to treat the case by the application of the Lewis splint. Failing he sent the patient to an allopathic surgeon, who sent the patient to Dr. Dudley. The latter discovered that the homeopathic physician, in his attempt to replace the fractured parts, had allowed them to overlap so that the proper occlusion of the jaws was not obtained, the molar teeth only occluding, leaving a space of nearly 1-4 of an inch between the incisors. A partial union had taken place so that it was first necessary to "break the jaw" again before the fractured parts could be properly adjusted. Models were shown of the case as it appeared when it came into Dr. Dudley's hands, and after the fractured parts had been properly adjusted. Dr. Dudley then stated to the patient, that it was a great pity that the cuspid tooth had been extracted, as it was the key stone of the arch and would greatly assist in the restoration of the parts to their original condition. The patient said that he had the tooth and pulled it out from his pocket where it had been carried for three weeks. The tooth, after proper treatment, was forced back into the alveolus from which it had been removed. A model was shown with the cuspid tooth restored. An interdental splint was then made which was worn for several weeks, when the patient removed from town. An interesting feature of the case was the fact that the patient made a complaint for assault and battery against the party who had knocked him down and broken his jaw. When the case was tried the young dentist who extracted the tooth was summoned

as a witness for the defense and made to swear that he had never read any book upon dental surgery in his life, and that he thought he must have broken that jaw when he extracted the tooth. Upon this evidence the judge released the defendant, no proper testimony having been given for the plaintiff. The re-planted cuspid tooth became firm, and the fractured parts re-united so that at the end of three months when the patient was seen the original occlusion was intact. In about six months, however, the cuspid tooth began to elongate so as to interfere with the occlusion, and becoming loose, was by a country dentist removed. Models of the varying stages of the case were shown.

A MEMBER: I move that the subject be passed. Carried.

DR. CARROLL: I will now open the flask of the case that I cast this morning and show you the result.

DR. PARR: I would like to call your attention to the piece of bridge work that I made this morning, and placed in the mouth of Dr. D. B. Ingalls.

A MEMBER: I move that we have a recess of ten minutes so that all may see it. Carried.

DR. DUDLEY, Chairman of Executive Committee: I have a few more names that have just been handed in for membership. They have been approved by the Executive Committee, and I move that they be disposed of in the same way as the others. Carried.

G. E. Mitchell, Haverhill, Mass., Active Member.
A. E. Lewis, Plymouth, " " "
J. A. Bazin, Montreal, P. Q., Junior Member.
C. F. Bliven, Worcester, Mass. " "
(All Elected).

DR. BRACKETT; The time has now come for the paper of Dr. W. Geo. Beers of Montreal, Canada, subject "Irregularities from Thumb and Tongue Sucking."

Montreal, Sept., 1887.
877 Dorchester St. West.

MY DEAR DOCTOR,—At last I find I cannot go; of two evils I send you the least, my paper. I wish that I could send a series of models on the subject, but I send three I value: so kindly take care of them for me, or return them by express.

You would do me a very great favor if you could give me any copies or duplicates of abnormalities, etc., for McGill College museum. Perhaps if you mentioned this to your society some good-natured fellows would remember me.

If you don't intend publishing the enclosed I'll take it. Hope you may have a glorious wedding.

Yours faithfully,

W. GEO. BEERS.

If the members will excuse errors in reading I will do my best and read Dr. Beers' paper.

THUMB AND TONGUE SUCKING.

By W. Geo. Beers, L. D. S., Montreal.

To many a child who resents weaning as an inhuman breach of maternal affection,

> "There is nothing half so sweet in life
> As love's young"—*thumb*.

Nature has designed a baby's thumb as the sweetest substitute for the mother's nipples, even for the supple stripling who can put his toe into its mouth, and wriggle off a nurse's lap like a globule of mercury. It is evident that in spite of its horny tip, and the absence of the milky way, there is something to a baby in its own tender thumb, which adults have forgotten, and no gross soul can know. I have just asked my wife why a baby likes to suck its own thumb better than its mother's, and without intending a pun, she said, "It is because it is handy." The habit seems to verge upon a sort of self-cannibalism, without a parallel in the records of the Anthropophagi, and certainly without one in the history of our Indians, whose papoose, strapped in its aranon, has no chance to indulge in fruitless sucking, unless it sucks its tongue, and I believe that sucking the tongue and lips is only the revenge a child enjoys for depriving it of the opportunity to suck its thumb.

Is it not surprising how a little habit, daily indulged in, will deform the features of the face in early life, when the cartilaginous and bony frame-work are soft and pliable; pulling the lobes of the ears, the lower lip, the eyebrows, each have their nemesis in some unnatural result. I once had under my daily observation a lad who had caused a considerable protrusion, as well as torsion of the left central and lateral incisors from the inveterate habit of biting the left thumb nail, and I am convinced that many cases of irregularity of these teeth are due to just such simple but undetected causes. We know how easily teeth may be widely separated in a few hours, with wood or rubber; in a few minutes with a mechanical separator;

how uneven occlusion, such as the anterior side of an inferior bicuspid meeting the posterior side of a superior cuspid, will deviate the weaker towards the median line above, or the posterior below. The constant and careless use of stiff tooth picks, even the vulgar habit of keeping one between the teeth must do more mischief in producing irregularity than we imagine. But there is this difference between the bad habits of adult life and those of infancy, those of the former never in any way effect or alter anything but the teeth and the transverse septa, and are not made hereditary; those of the latter not only effect and alter the position of the teeth, but create abnormal developments of the whole alveolus, which frequently descend to succeeding generations. I know that this law of heredity does not apply to such abnormities as cleft palate, hare lip, etc., while it does apply to every normal feature. But it is curious how frequently it follows the mature result of a habit formed in childhood, when it seems altogether absent as the result of habits begun in adult life. The irregularities of the teeth which owe their origin and first cause to habits occuring after maturity, cannot divert the disection of the anterior plate of the alveolus, unless deliberately and persistently applied with a force that would make them exceptional.

In cases of protrusion of the upper incisors it is easy to distinguish between those of a congenital and those of an acquired form. I have one case that is the best illustration I have ever met of the former. It is a perfect V shape from the first molars to the turned points of the centrals, and is an exact reproduction of the upper jaw of the patient's mother. These cases seem to be bred in the bone, and to run in the blood, but I think the opinion of Dr. Kingsley is generally accepted, that they may have the hereditary tendency eradicated, if corrected as soon as they are developed.

Where no such hereditary transmission can be discovered, and where the peculiarity is not directly due to the retarded shedding of the deciduous teeth, outside of which the permanent ones may have erupted, it may safely be credited to the habit of sucking the thumb, even if the patient or parent deny it. The habit of tongue-sucking may become so unconscious that it may go on during the day, and even all night, unknown to the patient. Sucking the under lip has been frequently noticed when the child is awake as well as asleep, and it is not uncommou to observe these habits continued until the child is into its teens. I am not disposed to believe that the teeth of the lower jaw are much affected by thumb-sucking. It is said

that they are frequently elongated and pushed back, but I cannot see how this can occur when the thumb is *in situ*, as the nail or knuckle rests on top of the incisors, and ought to prevent rather than produce elongation; while the action of the strong tongue striking behind them at every suction, and the position of the lower lip in front, would seem to counteract any such effect as follows in the upper jaw. No matter how short or long a tooth is, it has its anatomical limit of enamel at the neck, and however elongated it may appear, it is not abnormally so if the cementum is not visible, but you can perceive that they are naturally long. I have one remarkable case where it was declared that the lower jaw had been pushed back as a result of thumb sucking, but it was a congenital malformation; the rami were short and small: in fact, it looked as if it did not belong to the skull, as the superior maxillary was very broad. There was an unsymmetrical development of the temporal bones, and a peculiar shortness from the symphysis to the last molar. The patient was about forty and yet there were no *dens sapientiae* in the lower jaw, while they were fully developed in the upper. The teeth of the lower were disproportionately smaller than those of the upper. There was a great fullness and depression of the occiput, what an Hibernian might call, a hump-backed skull. These various malformations were distinctively congenital, and yet it was apparent that notwithstanding the distance between the upper and lower incisors when closed, thumb sucking had caused the uppers to spread like a fan. I could not induce the patient under any circumstances to let me secure impressions. In the meantime, I am keeping my eye on him with the hope of a post mortem. Of course the pushed-back appearance of this lower jaw was exceptional, but I have yet to see the first case where the lower incisors were elongated or pushed back by thumb sucking. I can understand how sucking the lower lip as an inveterate habit, might draw the lower incisors backward, but never upwards.

Every one of us, no doubt, has met these cases in practice, and has found the difficulty in getting the patient to admit the soft impeachment. Very likely a thumb sucker becomes unconscious of the habit in the delectation of the indulgence, and is as honest in his denials as the Greek sailor who repudiated the charge of cursing by swearing it by all the Gods that he did not swear.

I have had also a genuine case of an hereditary thumb sucker, whose father's upper teeth were protruded by the same habit, and whose grandfather, on his father's side, had also caused an ugly

deformity in the same way. To such an extent did this patient suck his thumb, that the nasal septum was deviated to the left side by the pressure of the fingers lying against the nose in sleeping. There was but slight respiration through one nostril. I have at my office a model showing the perfect regulation of this case, giving color to the theory that the deformity, even when transmitted for two generations, may be remedied.

I think it will be found in about every case of thumb sucking that the tonsils are enlarged and the saliva vitiated. I have not met a case of an inveterate thumb sucker who was not also a mouth breather, and it may be that this last habit originates as a coincidence of the former. If the patient sucks during sleep, the tongue will lie under the thumb, instead of in contact with the hard palate; the mouth will necessarily perform the act of breathing. I venture to believe there is a great deal of superficial diagnosis, and nonsensical writing indulged in as to the nasal and mouth results of mouth breathing. Dentists who are constantly at the open mouth from childhood, have more opportunity to examine, and all things being equal, have more claim to be dogmatic in such statements, and it would seem to be their general opinion that while enlargement of the tonsils may occur, the assertion that uneven, irregular, or protruding teeth, and arched palate result from imperfect closure of the mouth, is not sustained by facts. There may be coincidences, and these would appear to be consequences. I believe that more careful diagnosis would trace the true origin to thumb or tongue sucking, and that the shrunken *orlae* which lie close to the septum, is as certainly due to the pressure of the fingers during sleep, as the fan-like spreading of the incisors is due to the thumb. Specialists are apt to become fanatical, and to attribute every abnormity to a perversion of the principles they maintain, and to assert that mouth-breathing *per se*, will not alter or affect the formed arch of the hard palate, is to show an ignorance of the anatomical and physiological laws of the maxillary. I admit the possibility of changing the form of the hard palate, but not by the natural or unnatural breathing. The acquired cause, if any, will be found to be in the thumb. When it is known that spontaneous dislocation of the lower jaw has occurred from vigorous thumb sucking during sleep; that the thumb is a hard mechanical force against the roof of the mouth and the teeth, and especially that the bones of a child are so easily altered by pressure, it is no surprise to find the palate behind the incisors of a thumb sucker, a perfect fit for the patient's

thumb. The chief muscles used in sucking are those of the tongue. The centre of the tongue is depressed by the genio-hyo-glossi, and the sides elevated by the stylo-glossi, and thus a vacuum is created. Of course the orbicularis oris is brought into play in seizing the thumb, much more than it could be in sucking the tongue, if it is used at all in the latter, but the tongue does the sucking. It is curious how inevitably this habit will extend from the thumb to sucking the clothes, and in fact, whatever the young imp can get into its mouth. It is quite strange to witness the indifference of parents and even physicians where the habit is observed. One would imagine that the idiotic expression which often results would be sufficient to warn parents from neglecting it. If we, as dentists, have opportunity, as we should have, to watch the growing teeth at least twice a year, we can hardly fail to detect children addicted to these habits. Like sleeping with the mouth open, which can be easily cured by gently and frequently pressing the lips together in sleep, if taken in the outset, fruitless sucking can be cured by daily watching and nightly prevention. When parents are made to understand the evil consequences and the difficulty of treatment, they will be more disposed to follow the advice we give them. Some children can be easily restrained or cured by making the habit a subject for ridicule and shame: others must be put beyond the power to indulge it. Whether you put aloes on their lips, gags on their mouths, boxing gloves on their hands, or Solomon's regulating apparatus on their buttocks, early and persistent attention will prevent one of the most unsightly deformities of the human mouth.

Just as I was closing this, I was given the accompanying slip from a paper:

"According to Dr. Berillon, the well-known French specialist, the practice of sucking the thumb at night, to which so many children are addicted, and of which it is next to impossible to break them, can be put a stop to by a single hypnotization, accompanied, of course, with the requisite suggestion. The child never by any chance returns to the habit again, though his memory retains no trace of the order or prohibition which operates so powerfully on his will."

Dr. Brackett: This very interesting paper is now before you for discussion.

Dr. A. M. Dudley: From a case which I once saw, I can heartily endorse what is said in the paper in regard to the ignorance

of parents as to the result of allowing children to indulge in this habit. I was going home from some dental meeting I had been attending, with a friend. We observed a child with its mother, in the car, the child sucking away at its tongue. The whole expression of its face became distorted. We watched the operation as long as we could, and, seeing how indifferent the mother was, we finally thought it was our duty to go forward, and broach the subject to the mother, and warn her of the danger which was coming to the child. The child was a little girl, eight or nine, possibly ten or twelve years old. The jaw had been badly deformed. To our surprise we found that the mother, instead of correcting the child, had rather indulged her in it, and had gone so far as to give the child something to hold in its mouth in the night to suck. She had not realized the serious results that were occurring from it, and was greatly surprised when we told her, that the child had a particle of deformity. The child never went to bed without something in its mouth to suck.

I had a case in my own practice, of a young lady, her father, superintendent of the public schools in Boston. This young lady had grown up to be twenty-two or three years of age, and had followed it up until she was a young lady, and had done nothing to break herself of it until she went to a dentist in Paris, and then found out, for the first time, that the irregularity was the result of thumb sucking. The case had been treated by the dentist to correct the irregularity so rigorously as to cause the death of the pulps, and my work consisted only in bleaching the teeth.

It is true that many parents do not realize that for their children to indulge in the habit of tongue and thumb sucking, is to produce irregularities.

Dr. Porter: I fully agree with the paper, and what has been said on the subject, but I know of a case of a child always taking hold of a blanket, and sucking it. Her parents indulged her in the habit, and the blanket was cared for by the mother. When that child was ten years old I noticed that the blanket had worn away till it was about a foot square. I think the young lady is about twenty-five years old, and she has about the most beautiful set of teeth I ever saw.

Dr. A. H. Gilson: I would like to ask Dr. Dudley, if in the case he mentioned he saw any deformity in the upper lip? I have noticed that in the upper lip there is a groove, caused, I think, by the thumb.

Dr. Dudley: In both the cases there was an apparent thickening of the tissues at the median line of the teeth, a shrinking of the lip, so that it did not come down over the teeth.

Dr. J. A. Bazin, Montreal, P. Q.: I remember a case that I had about twenty-five years ago. The patient was a young man of seventeen, and on questioning him he admitted the fact of sucking his thumb in his "baby" days. I brought about a satisfactory result in a little over two months. It was done in this manner:

A gold plate was struck to embrace the bi-cuspids and first molars and extending outside well up on the gums. On these extensions I fastened lugs to which I tied small rubber rings, and when the plate was in position in the mouth I passed a silk ligature through the ring and drawing tightly around the outside of the tooth, tied. To prevent the ligature slipping up on to the gums I made from thin plate, two flat hooks, similar to crane hooks, which were put over the cutting edge of the central insisors, the ligature being caught and held by the other end being squeezed.

Thus constant traction was exerted, and plate easily removed. About twice a week new rings were put on, and rapid movement obtained.

I may say that as the teeth came to the desired position I found that the lower teeth interfered, as they were long and nearly touched the gum of the upper jaw.

By keeping up a strong pull I found that the roots of the incisors of the upper were being brought outward, the lower teeth acting as a fulcrum, and the facial lines being materially changed, and the whole expression of the face much improved.

In due course, the plate was removed, and the teeth ligated for some weeks, and some few months after no sign of yielding could be perceived.

Dr. A. W. Colvin: Not having a model I wish the person was present. I expected she would be to-day. The case is of a young lady whose teeth protruded to that extent that she was ashamed of the appearance of her mouth, and would frequently cover her mouth with her handkerchief when conversing. I do not think the lip was shorter on one side than on the other, but had that appearance. The case just spoken of reminds me of my case. The inferior teeth striking the upper incisors and laterals so as to force them outward. I removed the left inferior incisor in order to make room. I then proceeded to force the whole front inward. The

change was very marked. I have treated many cases of this kind, but none with such pleasing results to the patient and myself.

Referring to the incident of thumb sucking related by Dr. Porter it is readily seen that in sucking the thumb the weight of the hand and forearm would have a greater tendency to draw the teeth outward than the sucking ot the corner of a blanket, as the weight of the blanket would be less.

A Member: I well remember that up to fourteen or fifteen years of age, I had considerable difficulty in covering my front teeth. The teeth were exposed, and my lip did not seem long enough.

A Member: I move you that the subject be passed, and that we now listen to the paper of Dr. Brown. Carried.

Dr. Brackett: We will now listen to a paper on "Methods of Bridge Work," by Dr. E. Parmly Brown of Flushing, L. I.

ALL PORCELAIN BRIDGE AND CROWN WORK.

By E. Parmly Brown, D. D. S.

The words, "All-Porcelain," as used in relation to this new system of bridge and crown work, simply mean that nothing but porcelain is in sight in the mouth, or comes in contact with the oral secretions and the gums, as all the metal used in the system of bridge work is baked invisibly through the centre of each tooth on the bridge in the form of a bar, and extends from one or both ends of the bridge, at the approximal side or sides, in such a manner as the case demands for proper attachment. And in the crowns all the metal is in the form of root pins.

These bridges are usually attached by having the extending ends of the invisible metal bar embedded in gold fillings, in the approximating natural or "pier" teeth; again by having the extending ends of the bar running into gold-cap crowns on the approximating natural bicuspid, or molar teeth, through holes made in the approximal sides, and being bent at right angles and thence running into the root canals, where the nerves have been removed, or embedded in the fillings within the crowns where the nerves are alive; and, again, by having the extending ends of the bar running into the approximating sides of porcelain crowns, and thence turning at right angles within the crowns and running through them and into the natural roots to which the crowns are attached, thus forming root-pins, which are continuous with the bar running through the bridge.

These are the three modes by which these new all-porcelain bridges are attached. All the attachments, usually two, but more in large bridges, may be made by any one of these modes, or by any two, or by all three in combination. There are, however, many variations from these three modes of attachment. When bridges extend both sides of a pier tooth, the bar may be "saddled" across it, embedded in a gold filling or running through a porcelain or gold crown: and, again, the bridge may extend back from the pier tooth, when it is the last posterior tooth remaining, with no support on the posterior, thus being held by one "pier." There are many other variations, and they may be used in any combination, in any bridge, according to the demands of the case.

These bridges, in all cases, rest firmly and solidly on the gums, thus deriving additional support and preventing the accumulation of food impurities, where it usually takes place between the gum and the bridge. And the porcelain teeth, coming tightly in contact with the gum in the form of the finger ends, the labial surfaces representing the finger nails, ensures a perfect condition of health and cleanliness.

A great feature of strength is, that all the teeth of the bridge, including porcelain crowns, where such are used, are united on the approximating sides, by having an additional amount of body put on between the teeth before the baking. Thus, these bridges are continuous dentures of porcelain, with metal bars extending through the centers.

The metal bar, platino-iridium, square or flat, 13, 14 or 15 gauge, is buried invisibly in the centre of the teeth, by having slots or grooves ground in the back surfaces of the plate teeth, which are always used, as others would not stand the baking; and in this case, are the thick posterior teeth, the bar being fitted in, the tooth body applied, giving the proper contour to the back part of the tooth for cleanliness and strength, and the bridge being baked: or, where the thin anterior teeth are in use, by having the teeth riveted on the bar or held thereon by having their pins bent upon the bar, a slight groove being previously ground in the tooth for its reception, the body being applied and the bridge baked. This baking is done in the ordinary continuous gum furnace, the bridge being held on the slide by having one of the extending ends of the bar held in a hole drilled in the slide or by having the bridge held on a platino rack made on the slide for the purpose.

The new all-porcelain crowns, for incisors, canines and bicus-

pids, and used extensively in combination with these bridges, have platino-iridium pins baked in them, and the tooth material extends onto and around the pins, giving great strength at the cervical portion, the point of greatest strain, and fitting closely to the prepared root, when ground, fitted and inserted. The platino-iridium pins are of an improved form, and the strongest ever known, being broadest in a direction from the faces to the backs of the teeth, broadest at the cervical, the point of greatest strain, and thence tapering to a point at the end, and being broadly flattened in an opposite direction, laterally, within the crown itself, thus not allowing any portion of the pin to come near the surface of the crown, as the pin therein takes its form to a nicety. These crowns have one pin for incisors and canines, and two pins for bicuspids.

The citation of a few cases will convey some idea of the practical nature of this bridge work, aside from its superiority over any other form of tooth substitution, in natural appearance, strength and cleanliness.

Hundreds of bridges have been inserted by the inventor in the last three years, ranging from one tooth to twelve teeth, with a percentage of success never equalled by any other dental work known to him.

The two most hazardous cases were upper; first, bicuspids fastened to only one pier, each anchored in gold fillings; in the second bicuspids, and not being attached to the canines, floss silk could be passed around the teeth to insure extra cleanliness. The first case, for a lady, was attached to an old gold filling by its being cut into for the admission of the bar and the replacement of the gold over the bar for its retention. It has been in for over three years, and is in all respects perfect. The second case, for a dentist, was anchored in a new gold filling at a public clinic, one year ago, and is as firm and perfect as when inserted.

The single tooth bridge attached to the two approximating teeth by gold fillings, holding the ends of the bar, is the most common form. It is always a great success, the strain being but slight.

Where the bars are thus attached in gold fillings the gold is first well anchored in retaining pits and undercuts with the electric mallet, and is built well up to the margin of the cavities, forming "boxes" to receive the bars, which are finally covered over and the fillings finished as usual. Nos. 30 and 60 rolled gold are most advantageously used for these fillings, the rubber dam being applied as usual.

From one tooth to seven teeth in a single span have been most successfully inserted by such gold filling anchorages.

The first bridge, inserted over three years ago, was exhibited at the office of the inventor while this paper was being written. It was an upper first bicuspid in a lady's mouth, being "winged" onto a gold crown on the second bicuspid, by having the bar extended therein, with no attachment to the canine on the other side, thus permitting the floss silk to cleanse readily. The gum in contact with the bridge tooth was in a perfect condition of health, and to all appearances was growing out of the gum.

Where roots are used as piers, banding or capping can be done at the option of the operator. Attachments are best made to the anterior roots by crowning them with all-porcelain crowns, using a good oxy-phosphate cement, the crown pin being continuous with the bar of the bridge; and to posterior roots the attachment is best made by capping them with gold crowns, to which the bridge teeth are also connected in any of the ways already described.

The two most extensive cases, one of twelve, and the other of eleven teeth, were done about a year ago, and as an illustration of the way in which many teeth may be attached to few roots, both bridges are as firmly in place as the day they were set. The first bridge was attached to four teeth, the two canine roots being crowned with all-porcelain crowns, baked continuous with the bridge, the bar at one extremity being anchored in a gold filling in a molar, and the bar at the other extremity running into a gold crown and thence in the root canal of a molar on the opposite side. The second bridge was attached to only three roots, the same as the first, except that it was attached to only one canine root, instead of two, the gum in both cases keeping in a perfect state of health, hugging around the cervical portions, and festooning to a considerable extent, between the porcelain teeth.

To illustrate this point of the health and natural appearance of the gum around the porcelain bridges, where it is well known to keep in a very unhealthy state under the gold bridges, I shall cite the case of a bridge made for a dentist three years ago. It was of a single tooth, the bar being anchored in gold fillings, and the tooth itself being made extra long, and plunged into the socket from which the natural root had been extracted at the same sitting. This case was shown about six months afterwards at a clinic and the bridge tooth looked as if it were growing out of the gum; no ab-

sorption whatever had taken place and the gum was perfectly healthy.

The failures thus far only go to prove the system correct in every respect, as now perfected. Where too small a bar was used in the experimental stages of the work, a loosening of the bars in the fillings resulted, and where the baking was imperfect the teeth would break from the bar, but even these accidents occurred only in three or four cases out of several hundred inserted.

In one instance where a superior central and lateral were attached to a central root in the form of a crown, and to an old gold filling in the approximating natural canine, the canine's pier tooth broke off two and a half years after the insertion, it having a large amalgum filling extending far under the gum, and it required one hour for the removal of the bridge, the bar and root pin finally having to be cut through, after attempts were made to break the teeth with a small hammer and to rub them off with corundum wheels. A new bridge was replaced with the two roots crowned as piers, and was a perfect success.

Singers, lawyers, ministers, dentists, teachers, public speakers and others have laid aside their annoying plates, and had these bridges inserted with the greatest satisfaction to themselves and the operators: for, aside from the improvement to the vocal and the masticatory organs (and consequently an improvement to the general health), there comes the perfect truth to nature, the pure breath and avoidance of damage to the remaining natural teeth and disease of the tissue which plates produce.

The minor details of construction, which are the most difficult parts of the work, can only be obtained from special instruction by one who has been thoroughly over the ground, or by many perplexing failures with experience as the teacher, which latter is the more expensive method, and the one by which the inventor must reach the golden results.

This bridge work commands a better price from the public than any other dental work ever known. The inventor obtains in his practice twenty-five dollars and upwards for each tooth composing a bridge, and, in addition, the regular fees for the crowns and gold fillings for the attachments. And a better price is cheerfully and willingly paid, the patient realizing that he is getting the value of his money in something that is entirely new, durable and beautiful, being the height of art in its perfect truth to nature.

* * * * * * * * * * * * *

In the illustrations are shown some interesting specimens, the most ancient pieces of bridge work being contrasted with practical cases of the all-porcelain system, the most striking difference being that in the former wide bands of metal are in view both inside aud outside of the arch, and in the latter all the metal is baked invisibly within the centre of the denture.

Fig. 1 represents a specimen of the sixth century, B. C., which was discovered among the relics of the oldest Etruscan tomb yet excavated, situated at Capadimonti, Italy. The manner in which these natural teeth are banded together with gold, marks the earliest stage of pre-Roman dentistry.

Fig. 2 represents a specimen of Phænecian dentistry which Dr. Van Marter, of whose researches these specimens are a result, believes to be the oldest of all, and which is now in the Museum of the Louvre. These teeth are also united with gold bands, but in a more primitive manner than the preceding specimen.

In Fig. 3 are both the front and horizontal representations of an Etruscan specimen which dates back to 500 B. C. The cuspid and lateral incisors were natural teeth, while the two central incisors were evidently carved from some large animal's tooth, to fit the space. The other teeth had crumbled to dust when this specimen was unearthed.

Fig. 4 represesents a specimen taken from an ancient Roman tomb, dating one hundred years later than the preceding Etruscan specimen. The remaining and missing teeth were, no doubt, human ones, banded with gold on the Etruscan plan.

Fig. 5—Plate 2—represents Geo. Washington's teeth, now in possession of the Baltimore college of dental surgery, presented them by Dr. John Allen, to whom they were given by a son of Dr. John Greenwood, dentist to the father of his country. The upper denture is of gold, with teeth carved of the ivory of the Sea Calf fastened thereon by metal and wooden pegs; the three pieces seen connecting the plate and the teeth were added after the denture had been some time in use, by a jeweler and a blacksmith; one of gold by the jeweller, and two of steel by the smith. The lower plate is carved of bone with teeth of the Sea-Calf ivory, attached as to the upper.

The remaining specimens represented on this plate are in the possession of the author.

Fig. 6 represents a partial upper denture, worn by the Duc de

Brunswick, of France, and is carved of ivory, with natural human teeth attached by gold pins and wooden pins.

Fig. 7 represents a denture, carved entirely of ivory, by Dr. George, an English dentist of Paris.

In Fig. 8 are represented human and calves' teeth, in the different stages of carving and filing preparatory to attachment to artificial dentures. They are from the collection owned by Dr. Greenwood (above mentioned), and from which he selected what was required for cases in his practice. The piece of three teeth is the oldest specimen of bridge work made in this country; the attachment was made to a natural root by means of a peg running through the hole seen in the upper part of the specimen, and on the other extremity is a groove in which the approximal natural tooth closely fitted. The natural teeth among these specimens were taken from catacombs and tombs.

Figs. 11, 12, 13, 14, and 15, are front elevations of the porcelain crown of my invention, 11 and 12 being the crowns for incisors, with the porcelain extending onto the pin for extra strength, which pin is of the improved form, flattened in a direction from the face to the back of the teeth, and broadest at the point where it enters the crown, thence tapering to a point at the end, and taking the form of the tooth somewhat within the porcelain. Figs. 13, 14, and 15, are the crowns for bicuspids, with two pins either separate or connected in the form of a staple, with the porcelain extending onto them, as in the incisor crowns. In Fig. 15 the two pins are pressed together for a single rooted bicuspid.

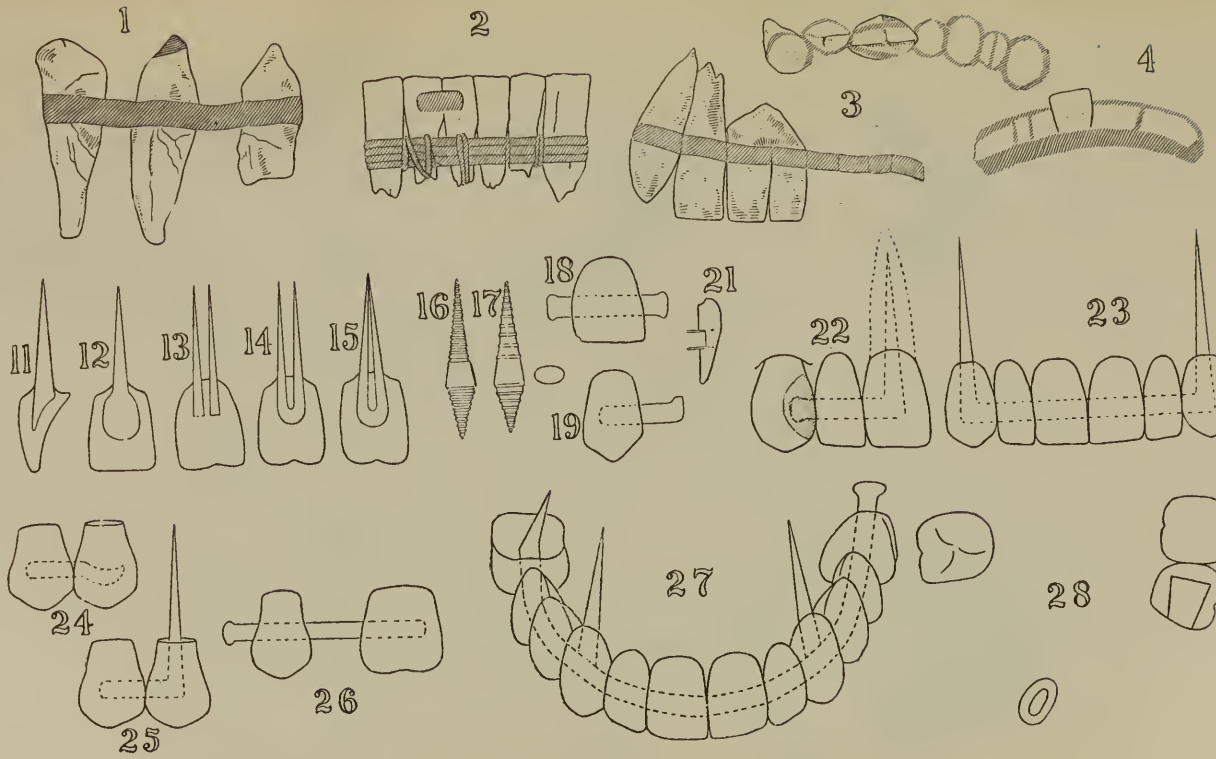
Figs. 16 and 17 are elevations of new forms of pins for porcelain crowns (patent applied for).

Fig. 18 is an elevation of a central all-porcelain bridge tooth, the extending ends of the bar to be embedded in gold fillings in the approximal natural teeth.

Fig. 19 is an elevation of a canine bridge, with the bar extending only one side, to be attached to only one approximal tooth.

Fig. 21 is a side elevation of a central plate tooth, the pins being in position and a slot being ground between them in the tooth for the reception of the metal bar during the manufacture of the bridge. The pins are then bent around the bar, the tooth body added to the posterior surface and the bridge baked.

Fig. 22 is a front elevation of a bridge of two teeth (central and lateral) attached on the one side by having the bar embedded in a gold filling in the approximating canine, the tooth on the other side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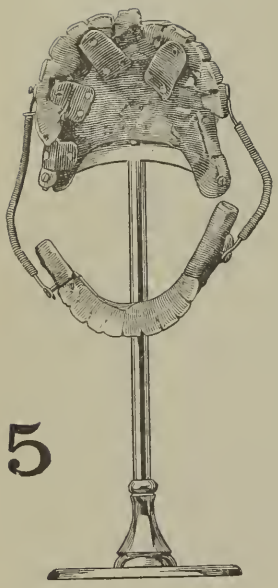

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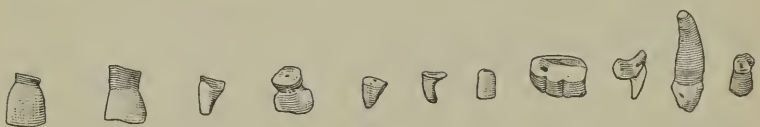

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being a crown covering the central root, with its bar turning at right angles and forming the root pin. The two teeth forming the bridge are united at their approximating surfaces, and press tightly on the ridge of the gum.

Fig. 23 is an elevation of a bridge of six teeth, the canines on either extremity being crowns covering their respective roots, the bridge bar turning at right angles within them, and forming root pins, and all the teeth being united at their approximating surfaces and pressing tightly on the ridge of the gum.

Fig. 24 is an elevation of the bridge shown in Fig. 19, here attached to a gold crown covering an approximating tooth in which the nerve is living, by having the bridge bar running through a hole in the side of the gold crown and embedded in the cement filling within the same, and Fig. 25 is the same bridge attached to a similar gold crown, covering an approximating tooth in which the nerve is dead, by having the bridge bar running in a like manner through a hole and into the filling in the gold crown; but in this case the bar is bent at a right angle and extends into the nerve canal for additional strength.

Fig. 26 is an elevation of a bridge of two teeth, the bar of which is to be "saddled" across a natural tooth (which will thus come between the two teeth of the bridge), either by being embedded in a gold filling in said natural tooth, or by running through a gold crown on the same. The extending end of the bar seen at one extremity of the bridge is to be embedded in a gold filling in the approximal tooth.

Fig. 27 represents a bridge of twelve teeth, the first being anchored at the one end in a gold crown, as just described, and at the other in a gold filling in the remaining molar, and also anchored to the canine roots by having the respective teeth on the bridge forming crowns, with long and strong pins extending into the nerve canals. All the teeth on the bridge are united on their approximal surfaces, and press tightly on to the ridge of the gum.

Fig. 28 represents the teeth remaining in a mouth in which a bridge of thirteen teeth was inserted. The bridge was anchored on the one extremity by having its bar embedded in a gold filling in the molar in which a cavity is seen to be cut, and in the gold crown covering the molar at the other extremity, and also by having a root pin cemented in the remaining canine root. Thus, this bridge of thirteen teeth is held by three piers, and is, probably, the most haz-

ardous case of bridge work ever done that has proved a perfect success, being as firm to-day as when it was inserted.

Dr. Brackett: Dr. Brown's paper is now before you for discussion.

Dr. Ingalls: I was thinking, while Dr. Brown was referring to the ingenious specimens that have been found perhaps in all ages, of the ingenuity that men and women have been called upon to exercise in cases of necessity.

Some twenty odd years ago, I was in Vermont doing some work, and was told that there was a lady living there who had inserted some teeth for herself. She said I could see them if I wanted to; so one day I examined the specimens of bridge work made by this woman herself. She took calf's teeth, and filed out some very good looking incisor teeth, fastening them together with gold or silver wire, and was wearing them very satisfactorily.

It was a very good specimen made by this woman to supply a want she felt.

Dr. Gilson: In grinding off teeth for crowns many patients complain of the pain in and around the gums. I have lately tried a new anæsthetic. It is called stenocarpine. It was discovered by a veterinary surgeon of New Orleans. It is derived from a bush known as the tanblanket, a species of the acacia tree. This veterinary surgeon has used it with exceedingly good effect in operating upon the fetlocks of horses. One pound of the leaves produces 30 grains of the alkaloid. This alkaloid he uses in solution the same as cocaine is used, one grain to the drachm. Hypodermically he uses 5 drops, or 1-12 of a grain, which he claims is, in its anæsthetic effect, equal to one grain of cocaine.

It seems to be harmless when so administed; no irritation is produced and no abscess follows. In experimenting, I believe he has killed a 9 months' old dog with one grain, administered internally.

I have tried it myself upon sensitive dentine with good effect, and I have saturated a bit of cotton with it, and laid it upon the surface of the gum around a second molar, and then extracted the tooth without any pain whatever. To-day I extracted the six lower front teeth with very little pain.

A Member: I move that we pass the subject. Carried.

Dr. Dudley: I move you that one hundred dollars be placed at the disposal of the Executive Committee, to be used if they deem it best in the matter of the international tooth crown company, pro-

vided there is one hundred dollars in the treasury after all the bills of this meeting are paid. Carried.

Dr. Brackett: I will appoint as the committee to prepare the memorial volume, Drs. Dudley, Gilson and Gerry.

A Member: I move that we now adjourn, to meet at the Parker House at 7.30. Carried.

SECOND DAY—EVENING SESSION.

Parker House, School Street, 7.30 P. M.

The following members, ladies and invited guests, were present at the evening session, and spent the evening in a social manner, adjourning at 11 o'clock:

Andrews, R. R.,	Cambridge, Mass.
Ainsworth, G. C. and wife,	Boston, Mass.
Baker, H. A. and wife,	Boston, Mass.
Barker, Wm.,	Providence, R. I.
Bazin, J. A.,	Montreal, P. Q.
Bennett, G. L.,	Winchendon, Mass.
Bliven, C. F.,	Worcester, Mass.
Brackett, C. A. and wife,	Newport, R. I.
Brannigan, E. W.,	Boston, Mass.
Brown, E. Parmly,	Flushing, L. I.
Carroll, C. C.,	Meadville, Pa.
Clement, C. W.,	Manchester, N. H.
Clements, T. W. and wife,	Brookline, Mass.
Codman, J. T.,	Boston, Mass.
Cranitch, G. M.,	Boston, Mass.
Cummings, E. G.,	Concord, N. H.
Daly, J. H.,	Boston, Mass.
Davis, E. B.,	Concord, N. H.
Dowsley, T. M.,	Boston, Mass.
Dudley, A. M.,	Salem, Mass.
Emerson, G. W.,	Boston, Mass.
Farley, J. P.,	Boston, Mass.
Foster, F. O.,	Boston, Mass.
Gallup, J. C.,	Bristol, R. I.
Gerry, G. A.,	Lowell, Mass.
Gilson, A. H.,	Boston, Mass.
Hayden, T. B.,	Boston, Mass.
Hayward, C. H.,	Peterboro', N. H.
Horne, R. F.,	Watertown, Mass.
Howe, F. D.,	Boston, Mass.
Ingalls, D. B.,	Clinton, Mass.
Jewett, E. M.,	Portsmouth, N. H.
Kinsman, E. O.,	Cambridge, Mass.
Kyes, F. W.,	Ipswich, Mass.
Leach, E. C.,	Boston, Mass.
Levy, F. A.,	Orange, N. J.
Lewis, A. E.,	Plymouth, Mass.
Lowe, G. A.,	Rockport, Mass.
Meriam, H. C.,	Salem, Mass.
McCartin, M. F.,	Jersey City, N. J.
McConnell, C. W.,	Boston, Mass.
McQuade, J. H.,	Medford, Mass.
Morey, J. Gardner,	New York City.
Munsell, W. H.,	Wells River, Vt.
Page, W. E. and wife,	Boston, Mass.
Parr, H. A.,	New York City.
Peach, P. H.,	Salem, Mass.
Porter, W.,	Salem, Mass.
Quinn, J. E.,	Boston, Mass.
Read, T. G.,	London, England.
Robinson, F. M.,	Boston, Mass.
Shepard, L. D.,	Boston, Mass.
Slack, W. F.,	Lawrence. Mass.
Smith, M. C.,	Lynn, Mass.
Stevens, S. G.,	Boston, Mass.
Stevens, W. L., and wife,	Somerville, Mass.
Swasey, O. F.,	Beverly, Mass.
Tillinghast, W. H.,	Providence, R. I.
Tuttle, C. E.,	Boston, Mass.
Warner, R. W.,	St. Johnsbury, Vt.
Waters, G. F.,	Boston, Mass.
Wetherbee, I. J.,	Boston, Mass.
Wiksell, G. P.,	Boston, Mass.
Williams, D. G.,	Boston, Mass.
Williams, E.,	Lynn, Mass.
Wilson, E. M.,	Boston, Mass.

THIRD DAY—MORNING SESSION.

UNION HALL, BOYLSTON STREET, }
9.30 o'clock. }

Dr. Brackett in the chair.

DR. GERRY: The following named persons are in arrears for three years. I have notified them by a registered letter, but they have paid no attention to it, and by Article VII, Sec. 3, of the By-laws, it is my duty to report their names, and they were dropped from the roll:

J. Austin,
W. J. Currier,
S. E. Emery,
D. W. Fellows,
G. F. Harwood,
C. H. Harwood,
W. H. Noyes,
F. A. Locke,
A. T Newhall,
R. H. Newton,
D. T. Porter,
J. Sharer,
G. M. Twitchell.

The following are in arrears two years and by the same article and section of the By-laws, are suspended:

A. F. Angell,
I. M. Case,
C. R. Dickerman,
F. A. Gay,
G. W. Hutchins,
C. B. Johnson,
C. O'Neil,
G. R. Ricker,
L. P. Shattuck,
W. B. Stevens.

DR. SHEPARD: Mr. President— We have during the past year lost one of our honored members, and I move that a committee be appointed to draft suitable resolutions to his memory. I refer to Dr. L. L. Buckland, of Providence, R. I.

DR. BRACKETT: I will appoint as that committee Drs. L. D. Shepard and W. E. Page.

DR. DUDLEY: I move you that the thanks of the society be tendered to all who have in any way added to the interest of this meeting. Carried.

DR. L. D. SHEPARD: The committee appointed to draft resolutions upon the memory of Dr. Buckland have attended to their duty and beg leave to submit the following:

Resolved, That in the death of Dr. L. L. Buckland of Providence, R. I., this society has lost an active member, whose faithful, earnest

work, in the profession, has been felt, especially in that corner of New England where he had his home.

Resolved, That this expression of our regret for his removal from his labors here in the midst of his usefulness, be entered upon the records of the Society, and that this token of sympathy be sent to the members of his family.

L. D. Shepard,
W. E. Page,
Committee on Resolutions.

Dr. Shepard: I move that they be passed by a rising vote. Carried.

Voted, That the thanks of the Society be tendered to the Harvard Dental School for the use of their rooms for our clinics.

Dr. Ingalls: I move that the place for the next meeting be left to the incoming Executive Committee. Carried.

Dr. Dudley: I move that the time of the next annual meeting be left to the incoming executive committee. Carried.

Dr. Brackett: The time has arrived for the election of officers. I will appoint as tellers to receive, sort and count the votes—Drs. Ingalls and W. E. Page. I am not a candidate for President, and I also speak the mind of the second Vice-President.

A Member: I move you that we take an informal ballot for President. Carried.

THE BALLOT.

Dr. C. A. Brackett, - - - - -	6
Dr. A. M. Dudley, - - - - -	16

Dr. Ingalls: I move you that the informal ballot be made formal. Carried.

Dr. Shepard: I move that the Secretary cast a ballot for the election of Dr. C. A. Brackett as First Vice President. Carried.

Dr. Gilson: I hereby cast a ballot for the election of Dr. C. A. Brackett, as First Vice President of the Society.

A Member: I move you that the Secretary cast the ballot of the Society for the election of Dr. C. W. Clement, as Second Vice President. Carried.

Dr. Gilson: I hereby cast the ballot of the Society for the election of Dr. C. W. Clement, as Second Vice President.

A Member: I move that Dr. Dudley cast the ballot of the Society for the election of Dr. A. H. Gilson, as Secretary of the Society. Carried.

Dr. Dudley: I hereby cast the ballot of the Society for the election of Dr. A. H. Gilson as its Secretary.

A Member: I move you that the Secretary cast the ballot of the Society for the election of Dr. G. A. Gerry as Treasurer, and Dr. E. O. Kinsman as Librarian and Microscopist. Carried.

Dr. Gilson: I hereby cast the ballots of the Society for the election of Dr. G. A. Gerry, as Treasurer, and Dr. E. O. Kinsman, as Librarian and Microscopist.

A Member: I move that the chair appoint a committee of three to bring in a list of members for the Executive Committee. Carried.

Dr. Brackett: I will appoint on that committee Drs. Dudley, Ingalls and Waters.

Dr. Brackett: While the committee are making up that list, please prepare your ballot for Assistant Secretary.

THE BALLOT.

Whole Number of Votes Cast,	22
Necessary for a Choice,	12
Dr. A. M. Dudley,	1
Dr. E. O. Kinsman,	2
Dr. W. P. Cooke,	19

And Mr. Cook was declared elected.

Dr. Ingalls: The committee appointed to select a list of names for Executive Committee have attended to their duty, and would report as follows: Dr. R. R. Andrews, Dr. H. A. Baker, Dr. George C. Ainsworth, Dr. T. W. Clements, Dr. W. E. Page.

A Member: I move that the report be accepted, and that the Secretary cast the ballot of the Society for the election of the five gentlemen as members of the Executive Committee. Carried.

Dr. Gilson: I hereby cast the ballot of the Society for the election of Drs. Andrews, Baker, Ainsworth, Clements and Page as members of the Executive Committee.

Dr. Brackett: We will now listen to a paper by Dr. G. A. Mills of New York; subject, "A Safe Use of Chloroform."

Dr. Dudley: Dr. Mills is unable to be with us, and has sent me a paper, but it is not the one as announced on the program. It is called "Then and Now."

THEN AND NOW.

By Geo. A. Mills, D. D. S.

There is no disputing the fact that with the announcement of Dr. Riggs' views (?) is associated the later interest in the disorder now known as pericementitis, so named,—we adhere to the thought, and rightly, so we think,—by Dr. Carl Heitzmann, the eminent histologist, of New York. To the Connecticut Valley Dental Society is due the credit of first recognizing Dr. Riggs' originality by a resolution passed in 1860. In 1875 Dr. Riggs published an article giving the pathology of the order, according to his understanding, in the Pennsylvania Dental Journal (now extinct), Editor Dr. Welchen. In 1871, Dr. Riggs operated before the class of the Harvard Dental School, by invitation of Prof. L. D. Shepherd. Mr. Charles Tomes, being on a visit to this country at that time, took an interest in those operations, and published an article referring to them on his return to London, in which he expressed the opinion that the necrosed or wasted edge of the process would prove a likeness to caries. [This can be found in the New York Dental Miscellany of 1871 or 1872, I think.]

Aside from an occasional reference to the subject in local Societies, but little notable mention was made of it until 1877, with one exception, which we will not omit. The Brooklyn Dental Society invited Dr. Riggs to give a series of cliniques, associated with conversations, at the Brooklyn Dental Infirmary, now extinct. This was in 1870. In 1876-'77, I published a series of six articles in the Cosmos, entitled "What I Know About Riggs' Disease," of which an edition of a thousand reprints was freely distributed among physicians, dentists, etc., both in this and other countries.

At the meeting of the American Dental Association, held at Chicago in August, 1877, Dr. Rehwinkle, well-known as a member of this Society of more than ordinary intelligence, presented a paper on this subject, taking the title of "Pyorrhœa Alveolaris," in which paper our articles were favorably noticed. This was the first attention given to this subject by the American Dental Association. Reference to the published proceedings of that body will inform the reader how the subject was viewed at that time. It can be stated that this was the initiatory notice of the subject by our national body; and it soon followed that it became one of interest among the local Societies throughout the country. There was a

decided opinion everywhere manifested that a foothold could only be gotten by contending inch by inch.

In 1880, I think, an article was published by Weitzel of Ensen, Germany; title, "Infectious Alveolitis." This was soon followed by an article by Dr. Black, on "Phagedemic Pericementi," in which it was claimed that the disorder was infectious.

As an indication of how difficult it has been to get intelligent confirmation of Dr. Riggs' views, I will give some facts. In 1877, being on a visit to Philadelphia, in conversation with Dr. James White, editor of the Cosmos, he called our attention to his teeth. We found this disorder marked, and by pressure showed him pus flowing freely from his left superior bicuspid. He requested us to operate for him. We replied that Dr. Riggs was master, and he was the one to take the case in charge. I communicated with Dr. Riggs in regard to the case, and an arrangement was made between him and Dr. White subsequently, Dr. White promising that should the case be successful he would give him an editorial. Of this Dr. Riggs informed me. I saw the case months afterwards, and it was successful. For some reason no editorial appeared.

Dr. Rawls of Kentucky had from time to time manifested much interest in the subject, but was disposed to dispute the soundness of Dr. Riggs' views. He criticized quite vigorously the efficacy of Dr. Riggs' treatment, and it was carried so far as to result in a challenge by Dr. Rawls, which Dr. Riggs accepted through the pages of the Southern Dental Journal of 1884. But after this he never heard anything further of it. To the credit of Dr. Rawls' intelligence, he afterward admitted the value of Dr. Riggs' treatment.

As a proof of the originality of Dr. Riggs' views, I will state a fact. In our articles referred to above I stated that "it was found necessary by Dr. Riggs in treating the disordered or necrosed edge of the alveolus to trim back to the life line to get a healthy reaction; *a principle recognized in surgery.*" I challenged the production of this view of the treatment, for the purpose of obtaining the facts. It has never been answered.

Two years later Prof. Garretson, in his brochure on the use of the dental engine in surgery, speaking of the treatment of this disorder, said it was "necessary to trim the circular edge of the necrosed alveolus," and he illustrated his form of burs for making the operation. Dr. Atkinson particularly emphasized the fact that "the merits of the Riggs' treatment was in removing the necrosed edge

of the alveolus," in his able paper upon this subject read before the First District Society of New York, October, 1885.

These facts are referred to for the purpose of confirming Dr. Riggs' views, which have been recognized also by several gentlemen in their inventions of instruments for treating this disorder. It will be noticed by the close reader of dental and medical literature that the subject has taken a prominent place of interest. Much criticism has been given, not only of the mode and the efficacy of the treatment of the disorder by Dr. Riggs, but also of the name and its pathology; but we fail to discover, by a faithful perusal, that these critics have added much, if any, improvement. While we would not and do not assume that no one can arrest the disorder by other means than the instruments devised by Dr. Riggs and his mode of using them, yet we are disposed to adhere to his instruments and his systematic method of using them as being pre-eminently efficient so far as the operation of mechanical surgery is concerned,—*i. e.*, in the hands of an intelligent expert as taught by Dr. Riggs. We do assume, however, that few, *very few*, are intelligently familiar with this method, or with its efficacy, for but a small number have as yet made themselves intelligent in this direction. If this method is yet to be understood and proved efficacious by many, it will be mainly by the younger practitioners in the future. It will be necessary, however, to teach it systematically by more than one demonstration. In no other way can students be made efficient than by a *master*, over many cases, studying case after case at the chair, following out the treatment indicated, and noting the conditions before and after. Are the schools ready for this course of teaching? If not, then it must come by a demand from outside; and we predict that it will in the near future.

It has been noticeable to the readers of the literature of the profession that several have aired themselves voluminously, but we fail to discover that they have done more than embrace an opportunity to form an escutchon on which to write their names in capitals. From such investigations as have been made and will continue to be made, by Dr. Carl Heitzmann and the able work of Dr. Black, we can hopefully anticipate much good in the future. So far as the basal principles underlying this disorder are concerned, they are so intelligently presented in the paper by Dr. Atkinson, above referred to, that we predict that they will stand the test of all time. This article is an isolated one in this regard, for it has given us the law of nature's operations in health and unhealth; and on this basis must we build

all our future structure of knowledge. I will add here, by way of emphasis and illustration, that the same is true of Dr. Davenport's able and valuable paper, read before the New York Odontological Society and published in the July number of the Cosmos. These papers are such isolated and exceptional ones that we notice them.

Dr. Riggs believed that the cause of the disorder in question was the lime deposits or tartar. Although this view is untenable before a better understanding, yet there are many at this late day announcing themselves as loosely, as seen in every journal of our literature from month to month. If not altogether on this subject they have in many others. It is true that Dr. Riggs did largely rely upon the mechanical surgery performed with his instruments for successfully arresting the disorder. This would be true in a large sense now if we could pick our cases; but it is true that much advance has been made by auxiliary treatment, local and contsitutional, and by mechanical remedies, including ligatures, metal frameworks and masticating apparatus, acting the double purpose of supporting the loosened teeth, often much separated by the action of the disorder, and mal occlusions. A large list of new remedies has been brought out, presumably to support the claim of a more effective treatment. As these are so familiar to those who read the journals it is hardly necessary to enumerate them. Speaking for ourselves, during an experience of eleven years of special attention to this subject, we have entirely abandoned our former use of medicines introduced into the pockets formed by the detached tissues and surgical operations incident to the disorder. We now rely first (or by association with constitutional treatment) upon the surgical operation with the Riggs instruments, making the treatment of the parts at each sitting as thorough as possible, and hoping to make it sufficiently so, that it will not require any further disturbance, and leaving the wounded parts with nature's clot as the best dressing possible, and prescribing such local dressing as the necessities of each case may indicate. Since pursuing this course, for the last five years, we find our results so much more satisfactory that we are sanguine that it is an intelligent advance.

We will not fail to mention a few of the valuable remedies for local dressings, such as iodol, prer-oxide of hydrogen, sulp. acid, (saturated solution, diluted to suit the case) tincture of capsicum, essence of peppermint, sulph. cinchonidia; often the four last in combination as a gargle. We are pleased to note favorably the medicated tooth powder, first noticed by us in the British journals as

being used by practitioners in Scotland. We think the formula consists of flour of sulphur, carbon of magnesia, pulverized chalk, sugar of milk, and perfume to suit the patient. Of course any of these remedies may be selected or rejected by the intelligence of the practitioner in charge.

We cannot forego the opportunity of noticing publicly what we have often privately, viz., the utter disregard of uniform agreement in dealing with this subject. To make ourselves better understood we will call attention to the common disposition manifested by practitioners in their daily practice in regard to this disorder. If we could ask the question and have it honestly replied to by our well regarded ones, how many recommend the treatment of this disorder as they are accustomed to do in the other familiar ones in practice? Is it done empirically, or by a faith established by an earnest, intelligent application of all the means available to the practitioner, and by a study of that which can only constitute an intelligence that can be imparted to those that apply for our services in their need, and which they hold us responsible in giving? We are familiar with a common remark made by the public, "My dentist says this loosening of my teeth cannot be helped, and that I must come to artificial teeth." And on being asked, "Do not some dentists claim to have success in arresting the disorder?" the reply is, "Well, we have been in practice as many years as they;" and, "oh well, these men will charge you a big fee, and it will all have to be done over again, and then you will loose your teeth;" and many such like remarks. Admitting that there are many loose statements carried about by the people, we are yet certain that a large percentage of these are true in fact. We can only claim to be of like passions with others, but there is a moral question involved, and every one who regards the value of it will, at least for the moment, put the question to himself: Am I disregarding this through ignorance, or wickedness. If we have not gained anything of value to our patients, more than is indicated by the mass of verbiage that is so often and so loosely dropped at our Society meetings in all these years, we think it should cause us to seek the reason of it. Understand us, we speak of this not because of a class of dentists who are constantly flourishing their thoughts without any digest of them, but to be wordy, but because of others that are frequent in published articles on other subjects among the list of scientific ones. We argue that if they are truly scientific, then they should prove that they are in their knowledge of

this subject, or not complain if they are vigorously criticised by those who have the courage to attempt it.

We are sure that we are sustained in the following statement: There is no better looking-glass in which to reflect one's self than the pages of our published literature. And no one who desires the good of his calling will ever resent a criticism if it reveals an earnest purpose for helpfulness. All intelligent critics, we use the term in its fullest meaning, are free from slang and indecorous personalities.

We will ultimately approach nearer and arrive at a fuller knowledge of, not only this subject, but of others that are allied in interest to the work we have in hand.

We have alluded to the multiplicity of terms applied to the subject or disorder we have under consideration. We are much at random in our nomenclature; and we can in this matter do as in all things else, apply the rightful or intelligent terminology only when we shall fully understand the constitution of the subject in question, and not before. The word education is derived from the Greek *educo*, which means to know. This is the key note for the hour. Will we know? And each for himself, by so doing, gain a digest of his own that may be assimilated and form a stimulus to our mental machinery? The more we have of this the more efficient will be the proof of the value of the work committed to our hands.

If we should seek to answer the question, what have we gained since Dr. Riggs proclaimed his views? we should say first, an attention to the subject which it had never had before; second, the proof that it is not a disorder of old age or senility, as it has been universally regarded; third, that it has been proved in a large sense to be amenable to a successful treatment in a large degree; fourth, its importance, regarding the salvableness of teeth by retention of physical supports and by the reduction of the active agencies that promote decay in so large a degree. We predict that the time will come when it will be proved that the most effective practitioner will be the one who regards a healthy mouth as of pre-eminent importance in saving teeth.

In closing we will say that those who encourage by word and deed all that tends to an intelligent advance in this field will not only honor their calling but have the inward reward of having done what they could for the relief of human suffering and physical deficiencies, so far as it relates to their chosen field of labor.

Lastly, we have gained sufficiently, viewed from a practical

standpoint, to gather about our labor in this direction an intelligent following in daily association with such opportunities in clinics that the subject cannot be so easily battledored and shuttlecocked by those who are so frequent in the arena of debates, displaying their pyorrhœa rhetoric, which seems of no other value than to besmear a righteous and beneficent service with ridicule, and to reflect the ignorance exhibited back upon the puerile pretender.

Dr. Ingalls: I would move you that in the future banquets of this society the expense, aside from the tickets to the invited guests, shall be included in the price of the tickets, no money to be taken from the treasury of the society. Carried.

Dr. Hayward: I move you that hereafter no wines or liquors be used in the room, at the banquets of the New England Dental Society. Carried.

Dr. Brackett: The time has now arrived for the induction into office of our new officers, and it gives me great pleasure to introduce to you your next President-elect, Dr. A. M. Dudley of Salem, Mass.

Dr. Dudley: I thank you for the honor that you have conferred upon me, and now await your pleasure.

A Member: I move that this meeting do now adjourn. Carried.

MEMBERS OF THE SOCIETY, OCTOBER, 1887.

Adams, J. F.,	Worcester, Mass.
Ainsworth, D. W.,	Ware, "
Ainsworth, G. C.,	Boston, "
Alexander, J. H.,	Mystic River, Conn.
Andrews, R. R.,	Cambridge, Mass.
Ames, G. H.,	Providence, R. I.
Batchelder, A. A.,	Westboro', Mass.
Barker, Wm.,	Providence, R. I.
Baker, H. A.,	Boston, Mass.
Burnham, A. W.,	Lowell, "
Bullock, Chas.,	Cambridge, "
Brackett, E. F.,	Boston, "
Bacon, E.,	Portland, Me.
Buckland, A. W.,	Woonsocket, R. I.
Baker, G. T.,	Boston, Mass.
Bridge, W. W.,	Providence, R. I.
Bonney, F. J.,	Portland, Me.
Blake, J. E.,	Amesbury, Mass.
Brackett, C. A.,	Newport, R. I.
Bickford, J. W.,	No. Attleboro, Mass.
Branigan, E. W.,	Boston, "
Bartlett, H. P.,	No. Brookfield, "
Baldwin, C. H.,	Nashua, N. H.
Baldwin, H.,	Nashua, "
Ball, J. W.,	Boston, Mass.
Briggs, E. A.,	Hopkinton, "
Blanchard, E. O.,	W. Randolph, Vt.
Bazin, J. A.,	Montreal, P. Q.
Bliven, C. F.,	Worcester, Mass.
Bennett, G. L.,	Winchendon, Mass.
Chandler, T. H.,	Boston, "
Clement, C. W.,	Manchester, N. H.
Coburn, H. W.,	Lowell, Mass.
Coolidge, J. B.,	Boston, Mass.
Cummings, E. G.,	Concord, N. H.
Chase, R. M.,	Bethel, Vt.
Chapman, J. W.,	Hyannis, Mass.
Curtis, J. W.,	Brunswick, Me.
Clapp, D. M.,	Boston, Mass.
Clements, T. W.,	Brookline, "
Coggeswell, Thos.,	Boston, "
Cook, Geo. L.,	Milford, "
Cheney, G. F.,	St. Johnsbury, Vt.
Colvin, A. W.,	Phenix, R. I.
Clark, R. O.,	Marlboro, N. H.
Colman, J. T.,	Boston, Mass.
Cooke, W. P.,	Boston, "
Curtis, W. S.,	Randolph, Vt.

Costellow, S. S.,	Burlington, Vt.
Collins, H. J.,	Boston, Mass
Davis, C. G.,	New Bedford, "
Davis, E. B.,	Concord, N. H.
Dowling, Oliver,	Wolfboro, N. H.
Dudley, A. M.,	Salem, Mass.
Dutton, L. B.,	Boston, "
Dennett, J. P.,	Gloucester, "
Duncan, Geo. C.,	E. Jeffrey, N. H.
Dickerman, D. S.,	Taunton, Mass.
Delano, R. T.,	Wareham, "
Daly, J. H.,	Boston, "
Dowsley, J. F.,	" "
Draper, H. S.,	" "
Emerson, G. W.,	Manchester, N. H.
Faxon, F. S.,	Brockton, Mass.
Fenderson, L. B.,	S. Boston, Mass.
Foltz, J. F.,	E. Boston, Mass.
French, C. S.,	Quincy, "
French, J. H.,	Fisherville, N. H.
Fillebrown, T.,	Portland, Me.
Fisk, J.,	Clinton, Mass.
Fanning, T. A.,	Hartford, Conn.
Gerry, G. A.,	Lowell, Mass.
Goddard, C. W.,	Boston, "
Garland, A.,	Farmington, N. H.
Guttman, J.,	Great Falls, "
Gilson, A. H.,	Boston, Mass.
Gray, C. H.,	Providence, R. I.
Gammon, N.,	Lynn, Mass.
Green, G. E.,	So. Gardner, "
Grover, J. M.,	Brookfield, "
Gage, Fred F.,	Boston, "
Hayward, C. H.,	Peterboro', N. H.
Haynes, W. A.,	Boston, Mass.
Horne, R. F.,	Watertown, "
Hill, Aaron,	Melrose, "
Huckins, D. T.,	Watertown, "
Howland, A. W.,	Lawrence, "
Hussey, C. E.,	Biddeford, Me.
Hodge S. D.,	Burlington, Vt.
Harris, E. N.,	Boston, Mass.
Hichborn, H.,	Boston, "
Hamilton, N. F.,	Richford, Vt.
Howe, L. N.,	Boston, Mass.
Harris, O. F.,	Worcester, "
Ingalls, D. B.,	Clinton, "
Jarvis, Wm.,	Claremont, N. H.
Jewett, E. M.,	Portsmouth, "
Jewett, W. A.,	Gardner, Mass.
Johnson, H. E.,	No. Attleboro, "
Johnson, W. F.,	E. Corinth, Me.
Kinsman, E. O.,	Cambridge, Mass.
Kershaw, C. A.,	Lawrence, "
Kirby, A. T.,	Providence, R. I.
Knight, J. K.,	Hyde Park, Mass.
Kyes, F. W.,	Ipswich, "
Lamkin, W. M.,	Lynn, "
Leach, E. G.,	Boston, "
Lennon, J. F.,	Providence, R. I.
Libby, H. F.,	Boston, Mass.
Lewis, J. A.,	Burlington, Vt.
Locke, L. F.,	Nashua, N. H.
Leavitt, Henry,	Skowhegan, Me.
Lewis, A. N.,	Burlington, Vt.
Lewis, A. E.,	Plymouth, Mass.
Lowe, G. A.,	Rockport, Mass.
Lull, A.,	Nashua, N. H.
Merrill, W. W.,	Merrimack, Mass.
Merrill, B. P.,	Plymouth, N. H.
MacDougal, S. J.,	Boston, Mass.
Mitchell, T. M.,	Taunton, "
Mead, W. B.,	Providence, R. I.
McQuade, J. H.,	Medford, Mass.
Macdonald, W. L.,	Boston, "
McGovern, E. E.,	Boston, "
Milligan, W.,	Cambridge, Mass.
MacDonald, C. F.,	Boston, "
Munsell, W. H.,	Wells River, Vt.
Norcross, C. H.,	Winchendon, Mass.
Noyes, W. P.,	Brookline, "
Osgood, C. H.,	Boston, "
Olcott, B. T.,	Keene, N. H.
Palmer, T.,	Fitchburg, "
Palmer, J. W.,	" "
Partridge, C. W.,	Lawrence, "
Peabody, D. D.,	Stoneham, "
Porter, Warren,	Salem, "
Porter, W. D.,	Providence, R. I.
Perry, H. B.,	Pawtucket, "
Peach, P. H.,	Salem, Mass.
Page, E.,	Charlestown, "
Page, W. E.,	Boston, "
Parker, A. J.,	W. Gardner, "
Pearson, J. A.,	Barton, Vt.
Pomroy, W. H.,	Gloucester, Mass.
Potter, Jesse,	
Quinn, J. E.,	Boston, "
Rideout, Leon,	Lynn, "
Roberts, A. D.,	Woonsocket, R. I.
Roberts, W. L.,	Weymouth, "
Reed, G. S.,	Boston, "
Sanborn, L. W.,	Loudon, N. H.
Shepard, L. D.,	Boston, Mass.
Shaw, S. J.,	Boston, "
Stevens, S. G.,	Boston, "
Swasey, O. F.,	Beverly, "
Searle, F.,	Springfield, "
Slack, W. F.,	Lawrence, "
Stevens, W. L.,	Somerville, "
Spicer, A. H.,	Westerly, R. I.
Saville, A. F.,	Rockland, Mass.
Shattuck, W. H.,	Pawtucket, R. I.
Sibley, L. W.,	Rochester, N. H.
Staples, H. G.,	Lyndon, Vt.
Smith, H.,	Athol, Mass.
Swift, Geo. H.,	Manchester, Vt.
Stoddard, C. E.,	Holliston, Mass.

Tasker, C. W.,	Dover, N. H.	Upham, R. H.,	Boston, Mass.
Tenney, A. W.,	Stoneham, Mass.	Ward, S. L.,	Lowell, "
Towle, C. N.,	Concord, N. H.	Ward, W. G.,	" "
Tuck, G. O.,	Gloucester, Mass.	Waters, G. F.,	Boston, "
Thurber, G. J.,	Johnston, R. I.	Wellington, S. L.,	Lancaster, N. H.
Townsend, A. F.,	Worcester, Mass.	Warner, R. W.,	St. Johnsbury, Vt.
Tracy, E. S.,	St. Johnsbury, Vt.	Wright, W. H.,	Brandon, "
Tracy, N. K.,	Charlestown, Mass.	Walton, M. F.,	Boston, Mass.
Taylor, E. S.,	Boston, "	Young, G. A.,	Concord, N. H.

HONORARY MEMBERS.

Atkinson, W. H.,	New York, N. Y.	McManus, J.,	Hartford, Conn.
Barrett, W. C.,	Buffalo, "	Metcalf, J. T.,	New Haven, Conn.
Fillebrown, J. B.,	Winthrop, Me.	Strong, E.,	" "
Garretson, J. E.,	Philadelphia, Pa.	Stockwell, E. T.,	Springfield, Mass.
Hodson, J. F. P.,	New York, N. Y.	Taft, J.,	Cincinnati, Ohio.
Mayr, C.,	Springfield, Mass.	Terry, Chas. T.,	Milan, Italy.

CONSTITUTION, BY-LAWS AND CODE OF ETHICS

OF THE

New England Dental Society.

ORGANIZED NOVEMBER 1863.

PREAMBLE.

In order to create a more fraternal intercourse, and to promote the welfare of our profession, the undersigned, Dental Surgeons, have adopted the following Constitution and By-Laws, and agree to support and abide by the same.

CONSTITUTION.

Article I.

This organization shall be called The New England Dental Society.

Article II.—Officers.

The officers of this Society shall be a President, two Vice-Presidents, a Secretary, an Assistant Secretary, a Treasurer, a Librarian and an Executive Committee consisting of five members, who shall be elected by ballot at the annual meeting, a majority of the votes given at such meeting being necessary to a choice.

Article III.—Membership.

Section 1. This Society shall consist of Active, Honorary and Junior members.

Sect. 2. Any dental practitioner of good moral character and twenty-one years of age, who has received a degree from a recognized dental or medical school, may, on the written recommendation of two members in good standing, signed by the applicant, become an active member of this Society.

Sect. 3. Honorary members shall be persons distinguished as Dentists, Physicians or Scientists.

Sect. 4. Junior members shall be students of dentistry or medicine, and practitioners of dentistry in good standing not otherwise eligible to active membership.

SECT. 5. Honorary and Junior members shall be eligible to debate all questions before the Society, but active members only shall vote for officers, or upon questions affecting changes in the Constitution and By-Laws, and hold office.

ARTICLE IV.—EXPULSION.

Any member may be expelled for unprofessional conduct, malpractice or gross immorality, on being duly convicted thereof; three-fourths of the members present at a regular meeting voting for such expulsion.

ARTICLE V.—MEETINGS.

The annual meeting of this Society shall be held on the first Thursday and Friday in October, of each year, unless otherwise ordered at a previous regular meeting.

Special meetings shall be called by the President, with the advice of the Executive Committee, or on the written request of five members.

ARTICLE VI.—QUORUM.

Ten members shall constitute a quorum for the transaction of business.

ARTICLE VII.—DISSOLUTION.

Should there fail to be a quorum for three regular meetings in succession, this Society shall be considered dissolved, and the Treasurer with the approval of the Executive Committee, shall dispose of the effects, and after paying all demands, divide the proceeds equally among the active and junior members.

ARTICLE VIII.—AMENDMENT OR REPEAL.

This Constitution may be amended or repealed at any regular meeting of the Society by a two-thirds vote, notice of such amendment or repeal having been given in writing at a previous regular meeting.

BY-LAWS.

ARTICLE I.—OFFICERS.

SECTION 1. The President shall preside at all meetings of the Society; call special meetings, as provided in the Constitution; appoint all committees, except the executive; approve all bills, and perform such other duties as usually devolve upon a presiding officer.

SECT. 2. In the absence of the President, the Vice-Presidents, in the order of their election, shall perform the duties of the office.

Sect. 3. The Secretary shall keep accurate minutes of the proceedings of the Society, and record them in a book provided for that purpose. He shall call the roll, read documents, and attest all bills signed by the President. He shall keep a list of the members, on which he shall note the date of the election, and place of residence of each, the time of death, resignation, or loss of membership. He shall receive and preserve all books and papers belonging to the Society not appertaining to the duties of other officers, conduct all correspondence, keep a correct copy in a book of all letters written officially, and a file of all he may receive. He shall cause all By-Laws actually in force to be inserted in a book provided for that purpose, which shall be accessible to members at every meeting, and shall perform such other duties as usually appertain to the office. He shall give notice of all meetings, and furnish the Chairmen of Committees with minutes of their appointment. When absent, he shall send the minute book to the meeting, and a Secretary pro tem. shall be appointed. He shall report at each annual meeting, and deliver all books, letters and papers to his successor in office. The Assistant Secretary shall render such assistance to the Secretary at the meetings as may be necessary.

Sect. 4. The Treasurer shall collect and hold all moneys of the Society, subject to its order, properly signed and attested. He shall make an annual report in writing, and give at all regular meetings such information in relation to its funds as may be called for. He shall also deliver to his successor in office, the books, papers and funds belonging to the Society.

Sect. 5. The Librarian shall have charge of all books, manuscripts, specimens and instruments belonging to the Society, subject to such restrictions as shall from time to time be made; and at each annual meeting shall render a report of his proceedings, and the condition of his department.

Sect. 6. It shall be the duty of the Executive Committee to audit the accounts of the Treasurer, provide proper places for meetings, and make all necessary arrangements for the same, and unless otherwise ordered by the Society shall prepare a list of subjects for discussion and appoint essayists, examine all candidates for membership who may be referred to them, and attend to such other business as the Society may direct.

Article II.—Membership.

Section 1. The names of all applicants for membership before balloting thereon, shall be referred to the Executive Committee. Should objection be made to any candidate his name shall be referred back to the Committee, and if, on investigation, the objection seems valid, they shall be empowered to drop the name.

Sect. 2. All candidates for membership shall be chosen by ballot.

Sect. 3. A majority of the votes of those present at any regular meeting shall be requisite to elect an active or junior member.

Sect. 4. A two-thirds vote of those present at any regular meeting shall be necessary to elect an honorary member.

Article III.—Fees.

Section. 1. On signing the constitution, active and junior members shall pay into the Treasury one dollar, which shall be construed as their annual fee for that year.

Sect. 2. The annual fee for active and junior members shall be one dollar, payable in advance. Honorary members shall be exempt from payment of all dues.

Article IV.

No member shall speak on the same question more than twice, nor more than ten minutes at a time, without permission of the Society.

Article V.—Resignation.

The resignation of a member shall not be accepted while he is under impeachment or until he shall have paid all dues.

Article VI.

No member of this Society shall take a student for a less term than three years, unless he shall have studied dentistry with some other practitioner, so as to make his term of pupilage equal to three years, or has attended one full course of lectures at some Dental or Medical College.

Article VII.—Discipline.

Section 1. Any member who shall violate the Constitution, By-Laws or Code of Ethics, or who shall be guilty of grossly immoral conduct, may be reprimanded, suspended or expelled, as the Society by a three-fourths vote may determine; provided, however, that the member shall not be subject to either of the foregoing penalties until duly convicted by a committee of five appointed for the purpose of investigating the charge preferred.

Sect. 2. Charges against members, and also the reports of the Committees of investigation, shall me made in writing.

Sect. 3. Any member in arrears for two annual payments may be suspended, provided due notice has been given him by the Treasurer; and after one year's suspension (no payment meanwhile having been made), his name shall be dropped from the roll.

Article VIII.—Amendment.

These By-Laws may be amended at any regular meeting by a two-thirds vote, notice of such amendment having been given in writing at a previous regular meeting.

ORDER OF BUSINESS.

1. Calling to Order.
2. Reading the Records.
3. Reports of Committees.
4. Application for Membership.
5. Admission of Members.
6. Unfinished Business.
7. Election of Officers (at annual meeting, first business, morning of second day).
8. New Business.
9. Communications.
10. Essays and Discussions.
11. Adjournment.

CODE OF ETHICS.

Adopted November 5, 1868.

Article I.— The Duties of the Profession to Their Patients.

Section 1. The Dentist should be ever ready to respond to the wants of his patrons, and should fully recognize the obligations involved in the discharge of his duties towards them. As they are, in most cases, unable to correctly estimate the character of his operations, his own sense of right must guarantee faithfulness in their performance. His manner should be firm, yet kind and sympathizing, so as to gain the respect and confidence of his patients; and even the simplest case committed to his care should receive that attention which is due to operations performed on living sensitive tissue.

Sect. 2. It is not to be expected that the patient will possess a very extended or a very accurate knowledge of professional matters. The dentist should make due allowance for such ignorance, and patiently explain many things which may seem quite clear to himself, thus endeavoring to educate the public mind so that it will properly appreciate the beneficent efforts of our profession. He should encourage no false hopes by promising success, when, in the nature of the case, there is uncertainty.

Sect. 3. The dentist should be temperate in all things, keeping both mind and body in the best possible health, that his patients may have the benefit of that clearness of judgment and skill which is their right.

Article II.—Maintaining Professional Character.

Section 1.—A member of the dental profession is bound to maintain its honor, and to labor earnestly to extend its sphere of usefulness. He should avoid everything in language and conduct calculated to dishonor his profession, and should ever manifest a due respect for his brethren. The young should show special respect to their seniors; the aged special encouragement to their juniors.

Sect. 2. The person and office arrangements of the dentist should indicate that he is a gentleman; and he should sustain a high-toned moral character.

Sect. 3. It is unprofessional to resort to public advertisements, cards, handbills, posters, or signs, calling attention to peculiar styles of work, lowness of prices, special modes of operating; or to claim superiority over neighboring practitioners; to publish reports of certificates in the public prints; to go from house to house to solicit or perform operations; to circulate or recommend nostrums; or to perform any other similar acts.

Sect. 4. When consulted by the patient of another practitioner, the dentist should guard against inquiries or hints disparaging to the family dentist, or calculated to weaken the patient's confidence in him; and if the interests of the patient will not be endangered thereby, the case should be temporarily treated, and referred to the family dentist.

Sect. 5, When general rules shall have been adopted by members of the profession practising in the same localities in relation to fees, it is unprofessional and dishonorable to depart from those rules, except when variation of circumstances requires it. And it is ever to be regarded as unprofessional to warrant operations or work, as an inducement to patronage.

Article III.—The Relative Duties of Dentists and Physicians.

Dental Surgery is a specialty in medical science. Physicians and dentists should both bear this in mind. The dentist is professionally limited to diseases of the dental organs and the mouth. With these he should be more familiar than the general practitioner is expected to be; and while he recognizes the superiority of the physician in regard to diseases of the general system, the latter is under equal obligations to respect his high attainments in his specialty. When this principle governs, there can be no conflict or even diversity of professional interests.

Article IV.—The Mutual Duties of the Profession and the Public.

Dentists are frequent witnesses, and, at the same time, the best judges of the impositions perpetrated by quacks; and it is their duty to enlighten and warn the public in regard to them. For

this and many other benefits conferred by the competent and honorable Dentist, the profession is entitled to the confidence and respect of the public, who should always discriminate in favor of the true man of science and integrity, against the impiric and impostor. The public has no right to tax the time and talents of the profession in examinations, prescriptions, or in any way, without proper remuneration.

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